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THE UNIVERSITY OF ALBERTA

THE EXPERIENCES OF ACCIDENT VICTIMS ADMITTED TO AN INTENSIVE CARE UNIT

by

© MARILYN J. ARCHIBALD

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF NURSING

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EDMONTON, ALBERTA

FALL 1986

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Supervisor

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Date October 14, 1986

Dedication

To my mother, Marie Sidloski, for encouraging an enquiring mind and a thirst for knowledge.

Abstract

The purpose of this study was to increase nurses' knowledge about the experiences of accident victims admitted to an intensive care unit so that nurses would have a better means by which they could think about what is required if appropriate nursing interventions are to be used in the care of these patients. In this study, the following were described: the perceptions of accident victims of their experiences in an intensive care unit; their perceptions of their experiences in a ward setting during the first week following their transfer from an intensive care unit; the changes, if any, that occur in their perceptions of these experiences; and their attempts, if any, to organize their perceptions of these experiences in a way that is meaningful to them.

Semi-structured interviews, using an interview guide were conducted. Six accident victims were interviewed on four separate occasions once they had been transfered from the intensive care unit to the ward setting.

The data collected through the interviews were subjected to content analysis. Categories and subcategories relating to the accident victims' perceptions of their experiences in the intensive care unit and in the ward setting were established. The patients' statements were segmented into analytic units according to the established unit of analysis and distributed over the established categories and subcategories. The reliability of the

investigator's coding was established using an independent coder. A reliability score of 92% was obtained.

Three major categories were identified: self, health professionals, and significant others. When the patients talked about their experiences in the intensive care unit, they primarily referred to their self in terms of their lack of sleep, their fear of procedures and of dying, and their anger at not always being understood by the health professionals. A large amount of data was obtained pertaining to the patients' experiences of hallucinations or unusual dreams. In talking about their perceptions of their experiences during the first seven days post transfer from the intensive care unit, the patients made references to their pain, their present and future motor functioning, their anger at the nursing staff, and their beliefs about themselves. There were few attempts made by the patients, either in the intensive care unit or in the ward setting, to comprehend their experiences. The patients generally perceived the nursing staff in the intensive care unit as being helpful in meeting their needs and generally perceived the nursing staff in the ward setting as not being helpful in meeting their needs, especially their need for pain control. The patients also perceived their significant others as being helpful through their support and love.

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The researcher is indebted to her advisor, Dr. June Kikuchi, who facilitated a stimulating learning experience and an excitement for nursing research. The contributions and patience of Dr. Helen Simmons, Dr. Purdell-Lewis, and Professor Doris Badir are warmly appreciated.

I wish to thank my husband, Ross, for his continuing support and faith in me, and our young son Edward for helping me to keep the thesis in perspective.

And finally, I wish to thank the patients in the study for openly responding to my questions.

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I. Introduction

An accident can suddenly transport individuals from a familiar secure environment into one such as that of an intensive care unit in which they must struggle not only for biological survival, but in which they need "to translate a difficult, complex bombardment of stimuli into a whole that is meaningful" (Antonovsky, 1979, p. 170). The world of the intensive care unit has been referred to as a "foreign territory with strange sights, sounds, odors, and a strangely costumed staff who speak a foreign language" (Germain, 1982, pp. 66-67). Individuals, whenever possible, will choose the environment or stimuli from the environment that is acceptable to them, but patients in an intensive care unit have no control over the choice of their environment or many of its stimuli (Smith, 1973). "(Their) ability to run from a frightening or painful stimulus is gone, as is (their) ability to analyze a situation objectively and plan how to control it" (Smith, 1973, p.16).

A. Background of the Problem

Special units for the care of the seriously ill patient were established during the 1960's. Following the establishment of such units, 'behavioral disturbances' were noted among patients in these units: illusions, hallucinations, nightmares, unrealistic thoughts, loss of orientation, general confusion, and inappropriate or uncooperative behavior.

Initially, researchers thought that the causative factor of these behavioral disturbances was physiological or biological in nature. However, the environment of the intensive care unit and sleep deprivation were later suspected of being major causative factors (Abram, 1965, 1966; Abram & Gill, 1961; Blachly & Starr, 1964; Kornfeld, Zimberg, & Malm, 1965).

Through his experiences as a psychiatric consultant to critical care units, Kiely (1973) found that the "depatterned, meaningless volley" of stimuli in an intensive care unit could lead to delusional and hallucinatory experiences when individuals were not able to organize the stimuli in meaningful terms in relation to past experiences (p. 57). These disturbances observed among patients who are or have been in intensive care units may, in effect, be manifestations of the patients' attempts to organize stimuli experienced in an intensive care unit in a way that is meaningful to them.

The reported percentages of behavioral disturbances experienced by patients recovering in an intensive care unit vary from 16% to 78% (Abram, 1965; Blachly & Starr, 1964; Kornfeld et al., 1965). This variation seems to be reflective of the different types of methodology used to determine the occurrence of behavioral disturbances: chart review, observation, and interview.

The findings of researchers vary with regard to what patients disclose about their experiences in an intensive

care unit. In relation to this point, Noble (1982), in studying the impact of the environment of four intensive care units on patients, found that the seriousness of the patient's illness prevented researchers from questioning patients about their experiences while they were in the intensive care unit. In their studies, DeMeyer (1967), Sadler (1979), and Wood (1971) found that, for a variety of reasons, patients, when interviewed following their transfer from an intensive care unit, did not volunteer any information about their experiences. On the other hand, Barnes (1975), DeMeyer (1967), and Schnaper (1975) found that the patients in their studies vividly described their experiences in an intensive care unit, once they were provided with a supportive atmosphere in which to relate their experiences.

B. Statement of the Problem

The studies reported in the literature, with regard to the experiences of patients in an intensive care unit and some distinct responses termed as 'behavioral disturbances', have primarily focused on the recovering cardiac surgical patient. Such patients have often had an opportunity to prepare themselves for the experience of being a patient in an intensive care unit. There is a lack of research concerning individuals who are suddenly transported to an intensive care unit, with no or minimal preparation following an accident, and who must then draw upon whatever

resources are available to them at that time to make sense of the stimuli which bombard them. Little is known about the accident victims' perceptions of their intensive care unit experiences, their perceptions of their experiences following their transfer from an intensive care unit, or their attempt(s) to organize such perceptions in a way that is meaningful to them.

C. Purpose of the Study

The purpose of this study was to increase nurses' knowledge about the experiences of accident victims admitted to an intensive care unit so that nurses would have a better means by which they could think about what is required if appropriate nursing interventions are to be used in the care of these patients.

D. Research Questions

1. Are there identifiable themes in the perceptions of accident victims of their experiences in an intensive care unit? If so, what are they?
2. Are there identifiable themes in the perceptions of these patients of their experiences in a ward setting during the first week following their transfer from an intensive care unit? If so, what are they?
3. Are there changes in these patients' perceptions of their intensive care unit experiences, during the first week following their transfer from an intensive care

unit? If so, what are they?

4. Are there changes in these patients' perceptions of their experiences in a ward setting during the first week following their transfer from an intensive care unit? If so, what are they?
5. Are there attempts by these patients to organize their perceptions of their experiences in a meaningful way, while they are patients in an intensive care unit? If so, what are they?
6. Are there attempts by these patients to organize their perceptions of their experiences in a meaningful way, during the week following their transfer from an intensive care unit? If so, what are they?

E. Definition of Terms

ACCIDENT VICTIM: an individual, injured in an accident, who is placed in an intensive care unit because his/her condition necessitates intensive care.

BEHAVIORAL DISTURBANCE: atypical behavior marked by such disturbances as the following: an inability to think or concentrate, impaired task performance, anxiety or fear of panic proportions, depression, hallucinations, illusions, nightmares, unrealistic thoughts, perceptual and auditory distortions, loss of orientation, general confusion, and inappropriate or uncooperative behavior.

EXPERIENCE: that which results from stimuli that impinge on an individual.

INTENSIVE CARE UNIT: an unit equipped with specialized staff and equipment, in which patients with life-threatening medical-surgical conditions are cared for and monitored constantly.

INTENSIVE CARE UNIT EXPERIENCE: an experience that results from stimuli that impinge on an individual while he/she is a patient in an intensive care unit setting.

MEANINGFUL: that which is understandable to, or interpretable by, and is of significance to an individual.

PERCEPTION: an individual's impression of what is experienced.

RESPONSE: any activity or behavior resulting from a stimulus.

STIMULUS: something that occurs in the internal or external environment of an individual, is perceived by sense organs, and induces a response.

F. Assumptions

Two basic assumptions were made:

1. The patients will report their experiences as accurately as their recall allows; and
2. 'Man' has a 'need to make sense' of what is happening to and around him.

G. Relevance of the Study to Nursing

Studies have demonstrated that nurses are often unaware of their patients' perceptions of their experiences in intensive care units and consequently do not exercise any definitive nursing measures to help these patients manage their experiences (Benoliel & Van de Velde, 1975; Bolin, 1974; DeMeyer, 1967; Gowan, 1979; Mitchell, 1981; Noble, 1982; Owens & Hutelmyer, 1982; Sadler, 1979; Schnaper, 1975; Wood, 1971; Worrell, 1977). Roberts (1975) articulated the responsibility of the nurse as that of moving the patient toward "organization and meaning" and helping the patient to "develop a sense of relatedness to the environment" (p. 596).

Nurses are with patients during their entire hospital experience, and are in a position to influence the positive or negative effects, responses, behaviors, and memories that patients will carry with them throughout their lives. If nurses are aware of patients' perceptions of their experiences and their meaning to them, nurses may be able to help these patients by providing information which they may require to make sense of their experiences. Such nursing care is especially important in the case of accident victims as it is highly unlikely that they will have had the opportunity to prepare themselves for the experience of being a patient in an intensive care setting. This study of the perceptions of accident victims of their experiences in an intensive care unit, their perceptions of their

experiences following their transfer from an intensive care unit, and their attempts to organize these perceptions in a meaningful way, may provide nurses with the information they require to begin to think about what they need to know to develop appropriate nursing interventions to assist such patients.

H. Organization of the Thesis

The content of this chapter has focused on the background of the problem, the statement of the problem, the research questions, the assumptions of the study, the relevance of the study to nursing, and the definition of terms.

In chapter 2, literature and research findings are reviewed which pertain to the general perceptions and responses of critically ill or injured patients in relation to their environment, and the factors affecting some specific responses (i.e., behavioral disturbances) of patients in an intensive care unit. In chapter 3, the conceptual frame of reference of the study is presented which is based on the review of the literature. It focuses on the interaction of the individual and his/her environment, and the personal resources which affect the individual and others in his/her environment. In chapter 4, the methodology of the study is described. Chapter 5 contains the findings of the study which are discussed in Chapter 6. Chapter 7 presents the summary, limitations, and

conclusions of the study, and the implications of the study for nursing.

II. Literature Review

A patient's meaningful contact with his/her environment, both external and internal, is a dominant theme in the literature pertaining to the responses of patients in an intensive care unit. As the environment of the critically ill or injured patient has been cited as having a major effect on the responses of such a patient, the review of the literature primarily focused on critically ill or injured patients in relation to the intensive care unit environment.

A. General Perceptions and Responses of Critically Ill or Injured Patients in Relation to Their Environment

Several terms have been used in the literature to describe the environment of the critically ill or injured patient: 'tension charged strategic war-bunker' (Hay & Oken, 1972), 'man-made torture chamber' (Lazarus & Hagens, 1968), 'paraniogenic environment' (Baxter, 1975), and 'alien environment' (Germain, 1982; Gowan, 1979).

The world of an individual in a critical care setting has been graphically described by Dlin, Fischer, and Huddell (1968):

> ...the machines have come to life, beating out their steady, monotonous beeps as they record the heart rhythm.... Gurgling suction sounds give testimony to the drainage apparatus and to their soft humming motors. The pulmonary respirator gasps on and off.... Tubes and wires seem to come from every

> orifice and surface of the body and lead to bottles on the floor, in the air, and to the machines scattered around the room (p. 603).

Danilowicz and Gabriel (1971), and Germain (1982) viewed this "foreign incomprehensible environment" as a 'subculture'. They reasoned that the patients' inability to understand this subculture with its role expectations, norms, and values contributed to the onset of some distinct responses termed as 'behavioral disturbances', which patients in a critical care setting have been found to experience. Other terms have been used to refer to these responses often manifested by the recovering critically ill patient: 'postcardiotomy syndrome' or 'delirium' (Blachly & Starr, 1964), 'cardiac psychosis' (Abram & Gill, 1961), and 'ICU psychosis' (Roberts, 1975).

The behavioral disturbances that have been observed include: an inability to think or concentrate, impaired task performance, anxiety or fear of panic proportions, depression, hallucinations, illusions, nightmares, unrealistic thoughts, perceptual and auditory distortions, loss of orientation, general confusion, and inappropriate or uncooperative behavior (Abram, 1965; Blachly & Starr, 1964; Bolin, 1974; Dlin et al., 1968; Egerton & Kay, 1964; Kornfeld et al., 1965; Linton, 1965; Roberts, 1976, 1978; Smith, 1973; Wood, 1971; Worrell, 1977).

The early studies of the responses of critically ill patients focused on cardiac surgical patients who spent

their initial postoperative period in a critical care setting. Such early postoperative cardiac patients were described by Abram (1965) as "a picture of complete apathy and fatigue" (p. 662). Dlin et al. (1968) found that the recovering cardiac surgical patients they studied were much like 'trapped rats' - immobilized, restrained, overwhelmed, weak, and watchful. The patients often confused their bewildering environment with their own fantasies. As they found more solace in machines, their ego boundaries 'reached' out to include the apparatus which 'became part of them'. This emotional attachment to machines seemed to result in the patients experiencing themselves as objects without any power to influence their destiny, and to precipitate expressions of fear and helplessness (Benoliel & Van de Velde, 1975; Myco & McGilloway, 1980).

Dlin et al. (1968) described specific phases through which the cardiac surgical patients in their study progressed postoperatively. Sixty open heart and pacemaker patients were observed over a three year period. The patients were matched for age, sex, and race with a control group of 60 general surgical patients. Six phases through which the cardiac surgical patients progressed, in the postoperative period, were identified: shock, impaired ego defenses with or without psychosis, presymbiotic, symbiotic, resolution of symbiotic union, and return to pre-morbid personality.

The term, 'shock', was used to describe the psychophysiological reaction which occurred when there was no opportunity for a fight-flight response. In the 'impaired ego defenses with or without psychosis' phase, the patients used various ego defense mechanisms in an effort to cope with their shock and, in the process, often confused fantasy, illusion, and reality. In the 'presymbiotic' phase, the patients felt dissociated from the mechanical devices attached to them, and viewed the apparatus and staff as essential to their survival. By the 'symbiotic' phase, the patients had accepted their dependence on an external object (device or person), and had begun to actively participate in their own survival. In the 'resolution of symbiotic union' phase, the patients functioned more independently with understanding and cooperation. In the final phase, 'return to premorbid personality', the patients no longer depended on a device or a person and felt 'whole' again (Dlin et al., 1968).

It is to be noted that, although Dlin et al. (1968) included a control group of general surgical patients in their study and compared their study and control groups in terms of their responses, they did not compare them in terms of the phases through which they progressed. Therefore, it is impossible to determine if the phases of progression that were identified were peculiar to the cardiac surgical patient.

Kimball (1969) studied the responses of patients to the experience of open heart surgery. Fifty-four patients were contacted the day prior to surgery and their anxiety level, 'life style', and orientation to the future were assessed. The patients were observed on a daily basis postoperatively, and interviewed prior to their departure from the hospital. A few patients were also interviewed at the time of their checkup visits at three month intervals for a period of 15 months.

Kimball (1969) examined the responses of his subjects in terms of three distinct time periods. The early period corresponded to the time period spent by the patients in the intensive care unit. Four types of responses characterized this period: 'unremarkable', a state in which the patients experienced a transient delirium but were generally cooperative; 'catastrophic', a state wherein the patients were passively cooperative but appeared to be in a state of hyperawareness and hyperalertness; 'euphoric', a state in which the patients were bright, alert, and responsive within 24 hours after surgery and returned to the general nursing unit on the third or fourth day; and 'altered states of consciousness', a state manifested by prolonged periods of delirium lasting several days to weeks.

The intermediate period included the time period from the transfer of the patients from the intensive care unit to the general nursing unit to their discharge from the hospital. Upon their transfer from the intensive care unit,

the patients experienced considerable 'anxiety' and 'apprehension' which was short-lived and readily resolved. However, the patients soon became increasingly withdrawn, and ignored relatives and nursing staff. During the latter part of this period, the patients again became anxious as they prepared to "return to life".

The third time period was the post-hospital period. It was a time of readjustment and rehabilitation, with the patients attempting to establish continuity between the present and the past.

A strength of Kimball's (1969) study is his examination of the responses of his subjects in terms of three distinct time periods. However, Kimball provides no rationale for selecting only 'a few' subjects to participate in the longer time frame of the study, nor does he indicate the sample sizes of the three time frames. This lack of information with regard to sample size and sampling technique leaves the reader questioning the validity of Kimball's findings, especially those pertaining to the post-hospital period.

Anderson (1982) informally interviewed 60 medical and surgical intensive care patients concerning their memories of their experiences in the intensive care unit. With most of the patients, the interviews were conducted during their hospitalization. However, some of the patients were interviewed as long as six months following their stay in the intensive care unit. Several themes in the patients' recollections of their experiences were identified: severe

visual and auditory disturbances, nightmares, helplessness, misconceptions about equipment, fear of death, and transfer anxiety. One common theme was the trust the patients had had in the nursing staff. They remembered that they had been impressed with the competence of the nursing staff in the intensive care unit but not with the behavior of nursing staff in the ward setting.

A problem with Anderson's (1982) study is that little control was exercised with regard to the scheduling of the interviews. In analyzing the perceptions of the subjects, Anderson also did not take into account her variable interview time schedule and the effect of time on the patients' ability to recall past experiences. Therefore, the findings do not reflect the effect of the variable of time on the subjects' responses, and are questionable.

In an article on the experience of being a patient in an intensive care unit, Russell (1982) classified patients' responses from the staff nurse's perspective. They were classified in the following way: inability to cope, fear of the unknown, regression, depression, irritability, anxiety, egocentricity, euphoria, and lack of control. The descriptor, 'inability to cope', was a general term assigned by staff to patients who were "not responding in a 'normal' manner" (p. 245).

The responses of patients to their intensive care unit experiences have also been viewed in terms of defense mechanisms. Busch and Gallo (1973), and Russell (1982)

viewed one such mechanism, regression, as the psyche's attempt to conserve energy in the face of overwhelming stress. They pointed out that it may be comforting for such patients to regress to a state which consists of demands they can master. Schnaper (1975) observed that the degree of regression evident in trauma patients was proportionate to the severity of their injury and that the regression seemed to intensify the patients' magical expectations of helpers. Some authors have stated that patients, overwhelmed by stimuli or immobilized by the idea of not being able to react according to expected capabilities, may engage in 'selective perception' or 'selective inattention' to block out some of the stimuli (DeMeyer, 1967; Mitchell, 1981; Roberts, 1976, 1978; Worrell, 1977).

With regard to other defense mechanisms, Dlin et al. (1968) found that patients were able to maintain their ego function by taking the defensive stand that 'they were dead', thereby passively accepting the therapeutic procedures and, in effect, 'playing possum' in preparation for the next move. Russell (1982) cited a neurosurgeon who had noted his recovering patients 'lying low' for three days following surgery. Noble (1982) queried whether 'psychosis' may, in effect, serve as a defense against an intolerable situation or a frightening environment.

It is also thought that patients in intensive care units sleep to withdraw from their monotonous environment or to combat their overload of stimuli. Roberts (1976, 1978)

observed that the more incoming stimuli there are, the more time patients need to sleep so that they can destructuralize the data that they have assimilated. In their study report on sleep patterns, Fabijan and Gosselin (1982) pointed out that periods of dreaming are needed for "problem-solving and emotional adaptation" (p. 22). Dlin et al. (1968) found that dreaming was uncommon in the early postoperative period and hypothesized that this could account, in part, for the agitated, hallucinatory, delusional behavior of some patients.

The reported dreams of patients in intensive care units seem to indicate that patients are highly affected by their intensive care unit experiences. In their study, Meyer, Blacher, and Brown (1961) found that these patients experienced repetitive dreams and fantasies which appeared to be derivatives or reproductions of the operative experience. Blachly and Starr (1964) noted themes of fire, crushing injuries, and escape in the reported dreams of patients in intensive care units. In a study by Anderson (1982), patients reported having had frequent nightmares which persisted for six months following their intensive care unit experiences. The dreams were 'chaotic' and 'colorful' and involved the patient being chased by something ill-defined. Patients who had survived defibrillation reported having had nightmares of burning or flames.

Rubinstein and Thomas (1970) speculated that, for patients in intensive care units, as the reality boundary blurs, vivid dreams and social misidentification occur. It can then become very difficult for such patients to separate reality from dreams, fantasies, or illusions, especially if this form of stimuli becomes life sustaining. Schnaper's follow-up study (1975) of 68 unconscious multiple trauma patients in a surgical intensive care unit revealed the patients' need to fill their void in consciousness with fantasies. The universal theme of these fantasies was that of 'being held prisoner'. The justification given by the patients for being incarcerated was highly individualistic and was predicated on a particular individual's psychological development. In their case study of two accident victims, Jackson, Pollard, and Kansky (1972), found that the victims described their hallucinations as similar to 'dreams' or 'movies'; with the 'dramatis personae' being the nurses or attendants.

The difficulty experienced by patients in separating fantasy and reality, mentioned earlier, is demonstrated in the anecdotal accounts of patients regarding their intensive care unit experiences. A coronary bypass patient recalled that he discovered what it was like to hear and think without being able to speak and move, and how difficult it was to separate dreams from reality (Derrick, 1979). An accident victim thought that she was in a 'fake hospital' or 'cider mill run by elves'(Thomson, 1973). A British

orderly's account of being in troopships and liferafts seemed to be reflective of his war experiences (Chilver, 1978). A professor of nursing, who, prior to being involved in a serious accident, was witness to a research study being conducted regarding the environment of intensive care units, related a feeling of division of self:

> I said my name was Sam. As I replied, another 'me', appeared at my side. This me was whole and entire...(and)...chastised me for my behavior.... Although I knew that another me was there and I could hear her clearly and distinctly, I also knew that I could not acknowledge her presence.... I knew what I was doing and continued to do it (Douglas, 1982, p. 230).

Reports with regard to the ability of patients to recall events that occurred during their period of stay in an intensive care unit have varied. Abram (1966) observed that patients in critical care units often experienced amnesia for the first few days. Dlin et al. (1968) observed the same phenomenon among 60 recovering cardiac surgical patients. However, they found that the amnesia was either global or selective. They hypothesized that it served as a defense mechanism against the fear of disintegration and the sudden stress of surgery. Kimball (1969) found that, while the cardiac surgical patients in his study experienced amnesia, at a moment of overwhelming anxiety long after their hospitalization, they often recalled an episode known

to have occurred during their amnesic period.

In a retrospective study of 68 trauma patients, Schnaper (1975) found that accident victims who had been amnesic, when given time to recall and to obtain information from relatives, reported 'dreams' that they had had during their amnesic period in the intensive care unit. In her partly retrospective longitudinal study of 60 medical and surgical intensive care unit patients, Anderson (1982) found that memory gaps were more common in the surgical patients. The study further revealed that these patients were unable to remember talking with their family members or nurses, despite having appeared to be rational while carrying on complex conversations with them in the intensive care unit.

A study by Barnes (1974) graphically illustrates the vivid recall by patients of their experiences while being cared for in an intensive care unit. Barnes studied the behavior and drawings of 13 children recovering in an intensive care unit. Her study revealed that the children were aware of what was happening in the unit, especially the treatments and procedures being carried out. The childrens' descriptions of their dreams and events in the intensive care unit were quite exact; however, Barnes noted an extreme amount of distortion in the children's descriptions of incidents involving themselves.

The variation in the reported findings with regard to the ability of patients to recall events that occurred during their stay in an intensive care unit seems to be due,

in part, to the retrospective nature of some of the studies that have been conducted and the researchers' lack of control for the effect of time on patients' ability to recall past experiences. These remarks apply to both Anderson's (1982) and Schnaper's (1975) studies. In these studies, the times at which the subjects were initially interviewed was not controlled. The time of the initial interviews ranged from the time of admission to the intensive care unit to six months post discharge from the intensive care unit in Anderson's study, and from the time of admission to the intensive care unit to 12 months post discharge from the intensive care unit in Schnaper's study. No attempt was made by either researcher to examine the patients' ability to recall events in light of the time that had passed since the patients' discharge from the intensive care unit.

A variation in the reported percentages of patients experiencing behavioral disturbances is also evident in the literature. This wide variation, from 16% to 78%, reflects the problematic investigative methods used to evaluate the extent of the disturbances (Hazan, 1966).

Abram (1965) studied the responses of 23 open heart surgical patients to the stress of surgery. The patients were interviewed preoperatively and postoperatively, and Abram partly drew his conclusions based on his experiences as a psychiatrist. Abram found that 16% of his subjects had experienced some type of behavioral disturbance. However,

since 8 patients, who died in the operating room or soon thereafter, were included in the determination of the incidence of behavioral disturbances, Abram's finding of only 16% may not be an accurate reflection of the incidence of behavioral disturbances in the postoperative period in such patients.

Blachly and Starr (1964) utilized a checklist to assess the mental status of 139 open heart surgical patients. However, in their report, they did not describe the checklist or indicate its reliability and validity. Consequently, the trustworthiness of their finding of a 57% incidence of behavioral disturbances is impossible to establish.

A study conducted by Kornfeld et al. (1969) demonstrates the methodological problems inherent in the studies that have been carried out to determine the incidence of behavioral disturbances in recovering cardiac surgical patients. Kornfeld et al. surveyed the charts of 119 patients who had been in an intensive care unit and found that 38% of these patients had experienced behavioral disturbances. When they conducted interviews with 20 of the 119 patients, they discovered that the percentage of patients who had experienced behavioral disturbances was 70%. As it is not clear if the 20 patients, who were interviewed, were randomly selected from the 119 patients whose charts were reviewed, the latter finding is open to question. The 20 patients, who were interviewed, may not

have been representative of the study sample. Nevertheless, the researchers concluded that the reported incidence of behavioral disturbances tended to be too low because many occurrences of behavioral disturbances were being missed as a result of a reliance on notations of them in patients' charts.

Sadler (1979) developed an assessment tool to determine the incidence and intensity of behavioral disturbances based upon the patients' subjective impressions of their experiences. Interviews were conducted with 50 patients during their first seven postoperative days. Thirty-six or 72% of the patients reported experiencing some type of behavioral disturbance. Although, it is mentioned in the study report that the content validity of the tool was assessed by a panel of five judges, the result of this testing was not reported. As it is thus impossible to determine the trustworthiness of the tool, the findings are questionable.

In her studies of the impact of the intensive care unit environment of four hospitals on patients, Noble (1982) found that patients tended not to report any unusual experiences (behavioral disturbances) or negative aspects of their intensive care unit experiences. They either spoke in positive terms about the environment or appeared not to remember their stay in the unit. Owens and Hutelmyer (1982) found that recovering cardiac patients consistently did not report any unusual experiences to nurses. Their chart audit

revealed that such experiences were documented for only 4 patients when 44 patients were noted by them to have had such experiences.

Benoliel and Van de Velde (1975), Bolin (1974), Mitchell (1981), and Schnaper (1975) observed that, while patients were troubled by their unusual experiences, they were afraid to mention or share them with staff. Wood (1971), in a study of the sensory environment of patients, determined that the majority of patients (87%) had not told the nursing staff of their unusual experiences.

From her study of postoperative cardiac patients, DeMeyer (1967) concluded that health professionals are not told by patients about their unusual experiences as they fail to ask the right questions. Anderson (1982), Bolin (1974), and Worrell (1977) state that skillful questioning is required to help patients talk about their experiences, and that patients may offer cues about their unusual experiences through words such as 'daydreams','nightmares', or 'dreams'.

Sadler (1979) found that patients needed 'permission' to talk about their unusual experiences and, once this was given, felt freer to articulate about their perceptions of their experiences that they ordinarily would have concluded were abnormal and thus censored. Worrell's (1977) unpublished master's study of the sensory and cognitive experiences reported by cardiac surgery patients revealed that patients were not only willing to describe their

experiences when asked about them, but indicated a need to talk about them. In her study of the effect of touch on seriously ill patients, McCorkle (1974) discovered that, while patients hesitated to participate in her study, none refused and, in fact, relaxed when they found out that the questions they would be asked would be about their perceptions of their experiences. From interviewing 60 open heart and pacemaker patients , Dlin et al. (1968) concluded that patients are usually cooperative and grateful for the opportunity to communicate with someone.

Lazarus and Hagens (1968) hypothesized that the activity of verbalization helps patients to regain a sense of reality. In their study of 54 recovering open heart surgery patients, they found that the patients seemed less dependent and able to sleep better after they had ventilated their concerns. Kornfeld et al. (1965) have expressed their suspicion that, if patients do not have the opportunity to report to staff the unusual phenomena they are experiencing, the severity of these experiences will intensify.

In summary, the general perceptions and responses of the critically ill or injured patient have varied. However, many of these patients have been found to have unusual experiences termed 'behavioral disturbances'. These unusual experiences were first noted among recovering cardiac surgical patients, in the 1960's. They were marked by an array of unusual cognitive and sensory experiences. The variation in the reported incidence of behavioral

disturbances seems to be reflective of the different investigative methods that have been used in the studies to determine the incidence, and the disparity between patients' and nurses' reports of behavioral disturbances. Conflicting reports also exist with regard to the incidence of amnesia or memory gaps. Some researchers believe that patients want and need to talk about their experiences as patients in an intensive care unit.

B. Factors Affecting the Behavioral Disturbances of Patients in an Intensive Care Unit

Clinical studies conducted in the 1960's demonstrated that a multiplicity of factors contribute to the production of behavioral disturbances in patients recovering in an intensive care environment. Blachly and Starr (1964) found that an increase in circulating catecholamines and sleep deprivation were the major determinants of a syndrome they called 'postcardiotomy syndrome'. They discovered that alterations in serum proteins and a defect in the metabolism of catecholamines gave rise to a product similar to LSD which resulted in behavioral disturbances. Egerton and Kay (1964) found that a combination of environmental, physiological, and personal factors were of causative importance. Kornfeld et al. (1965) also determined that, while physiological factors did contribute to the observed disturbances, the environment and routine of the intensive care unit were dominant considerations.

Some studies have shown two factors, age and sex, to be highly significant in identifying those individuals in intensive care units who are susceptible with regard to experiencing behavioral disturbances. In these studies, the susceptible individuals were found to be typically elderly (Blachly & Starr, 1964; Egerton & Kay, 1964; Heller et al., 1970; Layne & Yudofsky, 1971) and male (Blachly & Wooster, 1966; Blachly & Starr, 1964; Layne & Yudofsky, 1971). However, in their study, Rubinstein and Thomas (1970) found that a higher percentage of women (38%) as compared to men (29%) developed behavioral disturbances. Other researchers determined that sex (Kornfeld et al., 1965; Morse & Litin, 1969) was not a significant factor in the incidence of behavioral disturbances in an intensive care unit. These results should be considered in light of the type of patient who primarily underwent heart surgery during the 1960's and early 1970's - male and elderly.

Observations of children in intensive care units seem to indicate that behavioral disturbances are notably absent in children. In their study, Kornfeld et al. (1965) did not find any instance of such disturbances in children, while Egerton and Kay (1964) found that, of the 36 children in their study undergoing heart surgery, only one became delirious. Kaplan (1974) studied 58 consecutive patients between 7 and 14 years of age undergoing open heart surgery. Only 9% of these children experienced transient delirium in the postoperative period.

Kornfeld et al. (1965) believe that the nature of the preoperative and postoperative anxiety experienced by children accounts for the absence or low incidence of behavioral disturbances in children. They postulate that the anxiety of the children undergoing surgery stems from their concern about pain and its relief; whereas, the anxiety of adult surgical patients is related to life and death matters. Carty (1982) thinks that the absence or low incidence of behavioral disturbances in children is due to the child's use of a transitional object (e.g., a pillow or toy). She postulates that a child is able to cope with the loneliness and anxiety of his/her intensive care unit experience through deriving comfort from a transitional object. An adult is usually denied such an object.

With regard to the factors of intelligence, educational level, and occupation, Egerton and Kay (1964) found no significant relationship between these factors and the development of behavioral disturbances in patients in intensive care units. Blachly and Starr (1964) also found no clear relationship with regard to level of intelligence. However, Elsberry (1972), in summarizing many of the studies reported about behavioral disturbances, wondered if intelligent patients have difficulty in 'making sense' of the stimuli they experience in an intensive care unit. She thought that the increased perceptivity and sensitivity of such patients to cues in the environment may facilitate or interfere with their structuring and defining of the

situation and/or appropriate behavior.

Studies have shown that individuals with certain personal characteristics are at risk for developing behavioral disturbances in a restrictive atmosphere such as that of an intensive care unit. Meyers (1969), and Watson and Wyatt (1981) found that individuals, who were bored easily, were impulsive, sought excitement, or had a need to manipulate others, endured a perceptually deprived environment poorly. Watson and Wyatt (1981) found that the more dependent an individual was on others for stimuli, the more susceptible he/she was to developing behavioral disturbances. Meyers (1969), and Watson and Wyatt (1981) concluded that it may be possible that a perceptually deprived environment is tolerated or even enjoyed by individuals who do not depend on the environment for intellectual or emotional satisfaction and who find pleasure in fantasy or imagery.

Researchers have also attempted to assess the impact of another factor, preoperative visitations and/or instructions by health professionals, on the occurrence of postoperative behavioral disturbances. In a study conducted by Lazarus and Hagens (1968), an experimental group of patients experienced preoperative psychiatric evaluation interviews prior to cardiac surgery. Upon the patients' return to the nursing unit, the nurses were encouraged to establish a positive supportive and reality-oriented relationship with the patients, and to avoid disturbing their sleep. The

researchers found that 11 of the 33 patients in the control group and 3 of the 21 patients in the experimental group developed behavioral disturbances. Although the results of this study are impressive, the conclusion drawn by the researchers, that the nurse-patient relationship was the critical variable in determining the occurrence of behavioral disturbances, is open to question given that the factor of setting was not controlled. The patients in the control group and those in the experimental group were in different hospitals. Furthermore, the patients in the control group were situated in individual rooms furnished with radios and televisions, while those in the experimental group were cared for in a general surgical room not furnished with radios and televisions.

In 1982, Owens and Hutelmyer reported their finding that, although preoperative instruction helped patients to be more accepting of their postoperative behavioral disturbances, it did not reduce the incidence of such unusual experiences. These researchers assigned 64 cardiac surgical patients, on a consecutive basis, to either a control or an experimental group. The psychological aspects of their postoperative care were not discussed with the patients in the control group. The patients in the experimental group were advised of the possibility of their having unusual experiences in the postoperative period and were encouraged to relate any unusual feelings or experiences to the staff. Interviews were conducted on the

fourth to eighth postoperative day.

It is impossible to assess the validity of Owens and Hutelmyer's (1982) finding because the information required to make this assessment was not provided in the study report. Owens and Hutelmyer only reported that 68% of the patients in their study had unusual sensory or cognitive experiences, and that 22 of the patients in the experimental group were not uncomfortable as they understood what was happening to them. They did not provide any information with regard to the experiences of the control group nor the extent to which unusual experiences occurred in either group of patients.

Still another factor, degree of surgical stress, has also been noted to influence the onset of behavioral disturbances. Blachly and Starr (1964) studied 164 patients undergoing cardiovascular surgery with respect to the effects of four surgical causes of stress: anaesthetic time, pump time, amount of blood infused, and hypothermia. They found that there was an increase in frequency of delirium with an increase in each of the four causes of surgical stress. They concluded that the greater the stress, the quicker the onset and the longer the duration of delirium or behavioral disturbances.

Patients, who undergo emergency admission to an intensive care unit, have been noted to experience behavioral disturbances. Morse and Litin (1969) studied 60 postoperative intensive care unit patients noted by the

nursing and medical staff to be 'disoriented' with reference to time, place, and person. These patients were matched for age, sex, and severity of illness with 57 control patients. Ten of the 60 postoperative patients had had emergency surgery and had been admitted to an intensive care unit. The researchers noted that all of the patients who had undergone emergency surgery experienced behavioral disturbances. It was assumed by these researchers that the level of these patients' preoperative anxiety had probably been within the normal range. They concluded that, since these patients underwent emergency surgery and were unable to carry out the 'work of worrying', a healthy and necessary activity in the prevention of emotional disturbances, they experienced a 'flight neurosis' or an inability to cope which was manifested in their responses.

The lack of support systems has also been found to play a role in the incidence of behavioral disturbances. Gould (1973), in a review of the literature, found an increased incidence of behavioral disturbances in patients who had little or no family support or reassurance. With regard to this finding, Egerton and Kay (1964) concluded that insecurity resulting from the lack of a stable relationship with another person was the responsible factor. Hackett, Cassem, and Wishnie (1968) emphasize the patient's need for reliable, interpersonal relationships to enhance ego functioning and reality testing. Lasater and Grisanti (1975) view significant family members as able to provide an ill

family member with the reassurance he/she requires. Smith (1979, 1981) theorized that an individual with a stable family has a greater chance of surviving the intensive care unit experience than an individual with a disjointed family relationship. Roberts (1976, 1978) points out that family members are meaningful to the patient as they are the only familiar stimuli in the foreign physical environment of the intensive care unit.

Chatham (1978) studied the differential effects of support groups on the incidence of behavioral disturbances in recovering cardiac surgery patients. She had noted that, while significant family members were very anxious about what they could do to promote a healthier state in their recovering family member, they lacked purposeful direction and concrete knowledge of what they could do that would be helpful. Thus, Chatham provided instruction to 10 significant family members about the intensive care unit routine and equipment, and the patient's need for eye contact, frequent touch, and verbal orientation to time, place, and person. Using a 'Behavioral Checklist' and control and experimental groups, Chatham demonstrated that the active involvement of significant family members favorably affected five patient behaviors: orientation, appropriateness, confusion, delusion, and sleep.

Sleep deprivation and environmental noise have also been cited as major determinants of behavioral disturbances in patients in intensive care units. Studies have revealed

that patients exhibit signs and symptoms of sleep deprivation, and concomitant behavioral disturbances within 48 hours of their admission to an intensive care unit (Kornfeld et al., 1965; Layne & Yudofsky, 1971). McFadden and Giblin (1971) noted that these symptoms are often preceeded by one or two sleepless nights and are much like those associated with a state of "drunkenness" (Egerton & Kay, 1964).

Woods and Falk (1974) found that patients who were exposed to an acute care environment for less than 24 hours were at minimal risk of experiencing the effects of sleep depivation, and sensory disturbances; however, as the patients' stay in such an environment lengthened, the potential for the occurrence of these disturbances increased. Some researchers have found that, once a patient has been transferred from an intensive care unit to a ward and has had periods of continued uninterrupted sleep, a clearing of the sensorium and related behavioral disturbances is often dramatically evident (Blachly & Starr, 1964; Heller et al., 1970; Kaplan, Achtel, & Callison, 1974; Kornfeld et al., 1965; Lazarus & Hagens, 1968; McFadden & Giblin, 1971; Roberts, 1975).

Walker (1972) observed 4 postoperative cardiotomy patients during 3 eight-hour periods and determined that these patients were interrupted at least once every hour and that the longest undisturbed time period was 50 minutes. Hilton (1976) studied the quantity and quality of sleep of

10 patients in a respiratory intensive care unit and identified the factors which disturbed their sleep. Poor quality sleep was evident in all subjects; the longest uninterrupted period of sleep ranged from 42 to 96 minutes, while sleep disturbing factors occupied, on the average, 20 minutes of every hour.

Woods and Falk (1974), in a study of the effect of noise in an intensive care unit, found that the noise levels produced by the verbalizations of nursing and medical personnel were of a far greater range than those produced by mechanical devices and nursing interventions. Minckley's (1968) study of noise in a recovery room revealed that patients' interpretation of the quality and character of noises plays an important role in their reaction to noise. Noble's study (1982) of the environment of intensive care units illustrated that the most disturbing auditory stimulation arose from staff communications. In her study of medical and surgical patients in an intensive care unit, Anderson (1982) found that staff conversations were frequently misconstrued by the patients and that paranoia was evident in some patients. Anderson also noted that the patients often accurately quoted conversations about staff's personal matters. She concluded that these staff communications, overheard by patients, contributed to the development of hallucinations and delusions in the patients.

In summary, the factors affecting the occurrence of behavioral disturbances in patients in an intensive care

setting seem to be multiple and interrelated. Initially, investigators believed that physiological factors played a dominant role in the development of psychotic-like behavior. However, more recent studies have demonstrated the pivotal role of the environment. Some of the factors which have been found to be predictive of individuals susceptible to the experiencing of behavioral disturbances in the intensive care setting include age, sex, intelligence level, complexity of the operative procedure, emergency admission, support systems, sleep deprivation, and noise.

C. Summary of the Literature

Studies concerning the effect of the environment of the intensive care unit on the perceptions and responses of patients have focused primarily on recovering cardiac surgery patients who often have prepared themselves, to some degree, for their hospital experiences. They have not focused on patients who have been suddenly thrust into an intensive care unit because of an accident.

The research, to date, suggests that many cardiac surgical patients experience behavioral disturbances of varying intensity while they are in the intensive care unit. No one etiological factor related to these behavioral disturbances has been isolated; there appears to be an interactive effect of multiple events influenced by the individual patient's perception of the events. Also, the findings are inconclusive with regard to a patient's ability

to recall events that took place in the unit. Studies have also demonstrated that nurses are often unaware of the behavioral disturbances experienced by patients and, therefore, do not exercise definitive nursing measures to help such patients manage their disturbances.

The unusual behavioral disturbances that occur following admission of patients to an intensive care unit have been described in the literature by means of a multitude of labels and categories. The wide variation (16% to 78%) in the reported incidence of such disturbances reflect the difficulties inherent in the investigative methods that have been utilized.

Much of the literature consists of case studies or surveys based primarily on patients' clinical records; descriptive studies based upon clinical impressions of the investigators; expository studies based on the subjective impressions of nursing personnel; anecdotal patient accounts; and literature reviews relative to the intensive care unit. A major criticism of many of these studies is the treatment of subjective phenomena as objective and factual.

More systematic studies have included the use of one or more preoperative and/or postoperative interviews, questionnaires, direct observation of patients, physiological measures, and staff and patient interviews. However, many of these investigations contain serious methodological problems such as inadequate control of comparison groups, insufficient control of experimental

variables, and inadequate classification and evaluation of reported patient experiences. The reliability and validity of the instruments used were rarely discussed by the investigators.

III. Conceptual Frame of Reference of the Study

The following conceptual frame of reference is based on the investigator's knowledge gained from a review of the literature of the impact of the environment on the perceptions and responses of individuals who are or were patients in an intensive care setting.

An individual's response to his/her environment is a function of his/her perception of stimuli experienced in the environment (external and/or internal), and the meaning ascribed by him/her to those stimuli. Furthermore, an individual's perception of the stimuli experienced in his/her environment and his/her response to those stimuli are influenced by the interaction of the characteristics of the stimuli; the individual's personal resources, which affect the assessment, recognition, and classification of incoming stimuli; and the responses of significant others to the individual.

For a stimulus to be meaningful for an individual, it must be congruent with an individual's existing frame of reference and expectations. Personal resources identified in the literature which contribute to the construction of an individual's frame of reference include age, coping strategies, cultural background, developmental level, intelligence or cognitive ability, past experiences, philosophy or belief systems, physiological status, sex, and support systems (Antonovsky, 1979; Breu, 1979; Kiely, 1973; Meyers, 1964; Reichle, 1975; Ritchie, 1981; Roberts, 1976,

1978; Worrell, 1977).

Those stimuli, that an individual has perceived and which have significance, are more easily cognitively assimilated. 'Meaningful input', therefore, consists of information an individual is able to comprehend and to use for the purpose of understanding his/her situation and making decisions (Mishel, 1981; Worrell, 1977).

When individuals are unable to organize the stimuli experienced in their environment in meaningful terms relative to their frame of reference, they may turn inward in an attempt to find the meaningful organization they are seeking:

> (Their) perceptual focus narrows and (they) become increasingly unable to reach out to others for clarification of the situation. As a consequence, (they are) unable to communicate fears and fantasies to others...and begin to dwell on the details of the situation, unable to see the link between events and feelings. Questions remain unanswered, and uncertainty and fear become more and more troublesome. In an attempt to create order out of the unknown, (they) withdraw from external reality into a more familiar subjective world (Friedrich & Lively, 1981, p. 53).

An individual who is hospitalized "attempts to find meaning in the present illness and immediate technical environment in order to integrate events into a higher order

of structure and understanding" (Roberts, 1980, p. 65). However, individuals who are admitted to an acute care setting are often unable to perceive their situation realistically because of a lack of knowledge of or familiarity with their environment and therefore experience difficulty in integrating the stimuli in this foreign environment. The patient's perceptions may be altered to the point where the patient may no longer be able to differentiate meaningful from meaningless stimuli (Roberts, 1978), as the environment of the intensive care unit "deprives a patient of meaningful sensory input while exposing him to a continual bombardment of unfamiliar stimuli" (Smith, 1973, p. 24).

Responses which may be manifested by patients in an intensive care unit include anger, anxiety, complacency, confusion, daydreaming, depression, dreaming, fatigue, fear, hallucinations, helplessness, illusions, inappropriate or uncooperative behavior, loss of orientation, memory gaps, nightmares, perceptual and/or auditory distortions, and unrealistic thoughts (Abram, 1965; Blachly & Starr, 1964; Bolin, 1974; Dlin et al., 1968; Egerton & Kay, 1964; Kornfeld et al., 1965; Linton, 1965; Roberts, 1976, 1978; Smith, 1973; Wood, 1971; and Worrell, 1977). Such responses may be viewed either as the patients' attempts to organize their perceptions of stimuli experienced in their environment in a meaningful way or the effects of such attempts. However irrelevant or irrational a patient's

behavior may appear to an outsider, the behavior, from the patient's point of view, may be purposeful, relevant, and pertinent to the situation as he/she understands it (Roberts, 1975).

The responses of patients may also be affected by the reactions or responses of persons who are significant to the patients (e.g., family members, friends, and the health team). The responses of such people may facilitate or interfere with the patients' attempts to organize their perceptions of their experiences in a meaningful way. Family members may be especially facilitative as they are often the only familiar sight in an otherwise foreign environment. However, a family member, with whom the patient has an unstable family relationship, may provoke frustration and anger and impede the patient's attempts to organize his/her perceptions. Medical and nursing staff, being preoccupied with the medical or technical aspects of care, may often underestimate and/or overlook the patient's psychosocial needs, and may interfere with the patient's search for meaning and understanding.

> The patient's view of hospitalization...is different from that of the staff providing his care mainly because his life and his future are very much at stake in what is happening. In addition, the patient and the providers of his care are on different timetables in their judgements about what is important and in their reactions and special

concerns (Benoliel & Van de Velde, 1975, p. 260).

In summary, the conceptual frame of reference of the study suggests that the patients' perceptions of their environment, and the resulting responses to that environment are influenced by the interaction of the characteristics of the stimuli, the reactions or responses of others, and the patients' personal resources. These responses may, in effect, be manifestations of the patients' attempts to derive meaning from an environment that is 'foreign' and seemingly incomprehensible.

IV. Methodology

A descriptive exploratory study of 6 adult accident victims' perceptions of their experiences in an intensive care unit, and of their experiences in a ward setting during the first week following their transfer from an intensive care unit was carried out. Data were obtained through semi-structured interviews conducted during the first week following the transfer of the subjects from the intensive care unit. The data were subjected to content analysis.

A. Subjects

The study population included patients admitted to an intensive care unit of a large teaching hospital, as a result of an accident. Patients were included in the study if they (1) spoke English; (2) were between 18 and 55 years of age; (3) had been in the intensive care unit for at least 48 hours and no longer than 12 days; (4) had no active psychiatric problems nor had had any in the last 6 months; (5) had no history of organic brain disorders, including alcoholism; and (6) had not suffered a life-threatening head injury.

The study sample of 6 patients consisted of 3 females and 3 males. The ages of the subjects ranged from 18 to 36 years, with the average age being 25.8 years. The length of stay of the subjects in the intensive care unit ranged from 2.5 to 12 days, with the average stay being 7 days. With regard to their marital status, three subjects were married,

one was divorced, one had recently experienced a separation, and one was single. No patients were active practicing members of any formal religious group, but 5 subjects acknowledged a belief in 'a God'. In terms of their educational status, one subject had obtained an university education, two had completed grade 11, and the remaining three had completed grade 10. With regard to their past experiences with hospitals, three of the subjects had previously been patients in a hospital; one of these subjects had also visited her husband in an intensive care unit.

With regard to the type of accidents experienced by the subjects, five of the subjects were involved in motor vehicle accidents, and one was injured in an industrial accident. As a result of their accidents, five of the subjects sustained varying fractures of the long bones. Four of these subjects experienced acute respiratory failure secondary to the development of fat emboli. The remaining subject experienced severe blood loss as a result of a severely lacerated liver. All of these five subjects were intubated and on respirators while they were in the intensive care unit. With the exception of the subject whose liver was lacerated, all of these subjects had to return, at least once, to the operating room. The subject with the severely lacerated liver had to return to the operating room on six different occasions.

The level of consciousness of the subjects varied during their stay in the intensive care unit as a result of the severity of their injuries, the extent of their recovery from anaesthesia, and the amount and frequency of the analgesia they received. One subject, a patient who sustained chest injuries which resulted in a flail chest, received analgesia via an epidural block and was the only subject who remained fully conscious while in the intensive care unit.

B. Setting

The investigation was conducted in an intensive care unit and in two surgical wards of a large teaching hospital in a Canadian city. The intensive care unit consisted of 11 beds; 5 of these beds were in private isolation rooms. In this hospital, patients were directly admitted to the intensive care unit from the emergency department, operating room, or a ward. Three of the subjects were admitted from the emergency department, two from the ward, and one from the operating room.

The 'open' beds, that is, beds in the non isolated part of the intensive care unit, were situated so that two beds faced each other in successive rows separated by a partial wall. Curtains could be drawn around each bed when necessary. There was monitoring equipment by each bed and there were windows within viewing distance of all the patients with the exception of those in the isolation rooms.

There were two clocks in the unit. However, they were not visible to the majority of the patients. Each bed unit had overhead lights as well as indirect lighting. The lighting was dimmed in the late evening/night period, but the room was never totally darkened. At any one time, approximately 80% to 100% of the patients were on respirators.

The 'isolation' beds were in individual rooms within the general intensive care unit. Each of these rooms was similarly structured and furnished. Each room had a sliding glass door with curtains. The head of the bed faced towards the door, but the door was often closed in order to maintain strict isolation technique. There was a clock on a side wall, but the patient's view of it was often obstructed by the medical and monitoring equipment in the room. The overhead lights were on almost continuously in these rooms.

During the latter part of the time frame of the study, the intensive care unit was situated in a new building. In this environment, the 'open' beds faced a central nursing station and there was a window (looking out into a courtyard) at the head of each bed. There were flowered bed and window curtains in the new unit. The 'isolation' beds were in individual rooms with the head of the bed facing one of the walls in the room. The glass sliding door was covered with flowered curtains.

None of the subjects in the study were situated in the isolation rooms. The physical location of two of the subjects was changed while they were in the unit. Four of

the subjects were cared for in the old unit, one in the new unit, and one in both the old and the new units.

In the ward, two of the subjects were in private rooms, two were in semi-private rooms, and two were in large rooms with five beds. The beds of five of the subjects were in close proximity to an outside window and the bed of the sixth subject was close to the hall door. The two surgical ward settings were similar in hospital furnishings. No clocks were on the walls and the beds were separated by beige curtains. All of the subjects obtained television sets within 48 hours of their transfer from the ward. During this time period, personal items such as toiletries, books, magazines, flowers, and get-well cards appeared on the subjects' bedside tables.

C. Ethical Considerations

Permission to conduct the study was obtained from the Nursing and Medical Research Committees of the study hospital. A meeting with the Nursing Supervisor of the intensive care unit was held to clarify the purpose and conduct of the study, and to obtain support from the staff nurses on the unit for the conduct of the study. Letters of information about the purpose and conduct of the study were sent to the Medical Department Heads of Surgery and the Intensive Care Unit, as well as to the Clinical Nursing Supervisors of the surgical wards.

Consent for the patient's potential inclusion in the study was obtained from a family member (see Appendix A), after all planned surgical interventions were completed and the subject's vital signs were stable for a period of 24 hours. This consent form did not obligate the patient to participate in the study but served as a way of informing the family of the investigator's presence and of her observations of their relative/spouse/friend, while he/she was a patient in the intensive care unit. Formal written consent (see Appendix B) to include them in the study was obtained from 5 of the 6 subjects within six hours of their transfer to the ward setting. Consent from one patient was obtained in the intensive care unit just prior to the patient's transfer to the ward setting.

The purpose and conduct of the study was explained to the patients. They were informed that, soon after they had been admitted to the intensive care unit, approval for their potential inclusion in the study had been obtained from one of their family members until it was possible to obtain their consent to enrol them in the study. It was stressed that they were not obligated to participate in the study and that all information that had already been obtained about them by the investigator would be destroyed, if they did not wish to participate in the study. They were informed that confidentiality of all information obtained about them for the study would be maintained; their permission for the researcher to use a tape recorder during the agreed to

interviews to follow was obtained.

D. Data Collection

Contact was established on a once daily basis with the nursing staff of the intensive care unit to determine if any patients had been admitted following an accident. At other times, the investigator was notified by the nursing staff of the admission of such a patient and of his/her time of arrival into the intensive care unit. Confirmation of this time was established by examination of the patient's chart. Patients were provisionally included in the study, if they met the stated criteria for inclusion of patients into the study. After such patients had been in the unit for 48 hours, their charts were further scrutinized to obtain demographic data (see Appendix C) and to note any mention of behavioral disturbances. Thereafter, the patients were unobtrusively observed, by the investigator, for one hour each day while they were in the intensive care unit. This observation period began at 1100 hours, a time when nursing and medical interruptions were minimal. While the patients were in the intensive care unit, the investigator held conversations with the nursing staff based on their notations in the patients' charts. Also, during this time, the researcher sought out family members to inform them of the purpose of the study and the periods of observation of their spouse/friend/family member.

Due to the seriousness of the subjects' injuries, it was not possible to converse with 5 of the 6 subjects while they were in the intensive care unit. These subjects were intubated, on respirators, and varied in their levels of consciousness. The sixth subject, though fully conscious and not intubated during her stay in the intensive care unit, was only contacted 2 hours prior to her eventual transfer from the intensive care unit, when she met the criterion of having been in the unit for at least 48 hours.

Formal interviews, utilizing an interview guide based on a review of the literature (see Appendix D), were conducted in the ward setting once the subjects had been transferred from the intensive care unit. During the interviews, the subjects were encouraged to introduce areas for discussion through the use of open-ended questions. Questions, based on the investigator's observations of the subjects during their stay in the intensive care unit, were also asked.

Each patient was interviewed 4 times: within 6 hours of transfer from the intensive care unit, after 24 hours and before 48 hours following the transfer, after 48 hours and before 56 hours following the transfer, and 7 days post transfer. The length of the interviews ranged from 5 minutes to one hour. The length varied because of the subjects' physical and mental status, their fatigue level, their verbalness, and routine ward interruptions.

A tape recorder was used during most of the interviews. However, the quality of the recorded interviews with two patients was poor due to the fact that one patient's vocal chords were edematous and another patient's jaw was wired. Consequently, for these two subjects, the interviews were process recorded from memory immediately following each interview. Each taped interview was transcribed.

E. Data Analysis

Content analysis of the data collected during the 24 interview sessions was carried out. The verbal responses of the subjects, which pertained to their perceptions of their experiences in the intensive care unit and of their perceptions of their experiences during the first week following their transfer from the intensive care unit, were repeatedly scrutinized for themes until categories of analysis were induced from this data pool. Data gathered from the subjects' charts, conversations with the nursing staff, and the investigator's observations of the subjects in the intensive care unit were used as background information during the scrutinization of the data. The subjects' verbal references to their perceptions were segmented into analytic units according to the established unit of analysis and distributed over the established categories of analysis.

The coded units were then distributed over two phases to which the subjects' perceptions related: the intensive

care unit phase (the time period during which the subject was in the intensive care unit), and the post intensive care unit phase (the time period occurring between the transfer of the subject to the ward setting from the intensive care unit, to the end of the first week spent recovering within a ward setting). The coded units were further distributed over the four interview time periods (within 6 hours of the subject's transfer from the intensive care unit, after 24 hours and before 48 hours following the transfer, after 48 hours and before 56 hours following the transfer, and 7 days post transfer), to determine if the subjects' perceptions of their experiences changed during the first week following their transfer from the intensive care unit.

The unit of analysis was a verbal response of a subject which referred to his/her perception of an experience which occurred during his/her hospitalization. An unit consisted of a word, words, a phrase, a sentence, or a series of sentences which referred explicitly or implicitly to a subject's perception of an experience related to an aspect of the self, health professionals, or significant others. An unit ended and a new one began when the subject referred to an aspect of the self, health professionals, or significant others, that was different from the one he/she had been describing, or when he/she repeated his/her reference to an aspect of the self, health professionals, or significant others.

Categories of Analysis

Three major categories of analysis were established: self, health professionals, and significant others. Each of these categories consisted of sub-categories of analysis.

I. Self

Self refers to the patient's perceptions of his/her experiences as they relate to his/her self in a physical, emotional, or intellectual sense.

A. Physical refers to the patient's perceptions of his/her physical or physiological state, and physical functioning.

e.g., "Look at my arms. I've lost at least 20 pounds. I'm used to lifting heavy equipment. Now I can't even stand."

B. Emotional refers to the patient's perceptions of his/her feelings or emotional state.

e.g., "I've become very emotional these last few days."

C. Intellectual refers to the patient's process of thinking or thoughts reflected in his/her beliefs, dreams and/or hallucinations, and attempts at comprehension.

1. Beliefs refers to those things accepted by the mind as being true.

e.g., "Oh no, she was there."

2. Dreams and/or hallucinations refers to mental experiences that appear realistic or believable but

have, despite their vividness, no objective reality.

e.g., "... there was a group of people across from me plotting to kill me as I had some vital information."

3. Attempts at comprehension refers to acts that are carried out in order to arrive at an understanding of something, and the results of these acts.

e.g., "I think probably just because it had been very recent."

II. Health Professionals

Health professionals refers to the patient's perceptions of his/her experiences as they relate to physicians, nurses, or other medical personnel. There were two types of health professionals: helpful and unhelpful.

A. Helpful refers to those health professionals whose actions and/or behaviors were perceived by the patient as aiding in the meeting of his/her needs.

e.g., "Last week I had Diane, she understands me."

B. Unhelpful refers to those health professionals whose actions and/or behaviors were perceived by the patient as not aiding in the meeting of his/her needs.

e.g., "They don't believe how much pain a man can have."

III. Significant Others

Significant others refers to the patient's perceptions of his/her experiences as they relate to his/her immediate

family and friends, or organizations. There were two types of significant others: helpful and unhelpful.

A. Helpful refers to those significant others whose actions and/or behaviors were perceived by the patient as aiding in the meeting of his/her needs.

e.g., "She understands me - we've known each other since Grade 2."

B. Unhelpful refers to those significant others whose actions and/or behaviors were perceived by the patient as not aiding in the meeting of his/her needs.

e.g., "Workman's Compensation still hasn't come through yet."

Coding Reliability

A coder independently coded a random sample of five pages from the interview narratives to assess the reliability of the investigator's coding of the data. The pages were unmarked except for the demarcation of the units. The coder was provided with the definitions and examples of the categories of analysis, and asked to code the units according to the definitions. After training and several practice sessions, a 92% agreement on the coding of the demarcated units was obtained between the coder and the investigator. Also, two weeks after she had coded the units, the investigator recoded the units in a random sample of five pages from the interview narratives. A 96% agreement between the two codings was obtained.

V. Presentation of the Findings

The findings with regard to the accident victims' perceptions of their experiences in an intensive care unit and their perceptions of their experiences during the first week following their transfer from the intensive care unit are presented in three sections: self, health professionals, and significant others. In each section, the findings are presented in terms of two phases: the intensive care unit phase and the post intensive care unit phase. The changes in perceptions which occurred over the four interview periods are described in the appropriate places within each section.

A. Self

Self refers to the patient's perceptions of his/her experiences as they relate to his/her self in a physical, emotional, or intellectual sense. In talking about their experiences in the intensive care unit, the patients primarily made references to their sleep, fear, anger, and hallucinations and/or dreams. In talking about their experiences during their first seven days post transfer from the intensive care unit, the patients made references to their pain, motor functioning, anger, beliefs, and attempts at comprehension.

Physical

Physical refers to the patient's perceptions of his/her physical or physiological state, and physical functioning.

With regard to their physical self, the patients mainly talked about how they had or had not been able to sleep in the intensive care unit, and about how they had perceived the medical procedures that they had experienced in the intensive care unit. The patients talked about their need for sleep upon their transfer from the intensive care unit, the pain they were experiencing in the ward setting, and their present and future motor functioning.

Most of the patients perceived that they had had difficulty sleeping well in the intensive care unit: "I had a lot of trouble sleeping there." One patient stated, "I never slept." One reason given for their difficulty was the constant interruption of their sleep by the nursing staff. Another reason given was that they had tried to stay awake because they had felt that it was important to stay awake in the intensive care unit in order to understand what was happening to them: "I felt I had to be awake..." One patient, who had been fully conscious during her stay in the intensive care unit, stated, "I tried to stay awake..." However, this patient said that she "could just drop off to sleep at any time" in the intensive care unit and that her quality of sleep had been better in the intensive care unit than it presently was in the ward setting. This seemed to be because her pain had been better controlled in the intensive care unit.

Following their transfer to the ward, the patients expressed a desire and need for sleep. One of them said,

"...but I just wish I could get a good night's sleep. I just know I'd feel better." The initial interview which took place, on the average, four hours within the transfer of the patients from the intensive care unit to the ward setting, was punctuated by the patients' apparent fatigue as they struggled to stay awake. After the patients had had their first overnight sleep in the ward setting, they talked about how tired they had been. One patient aptly described her fatigued state: "I was just wore right out." The patients also reported how much better they felt after their first sleep period in the ward setting. One patient stated, "It helped things greatly." Another patient stated, "I feel great."

Some of the patients perceived that the obtaining of an adequate amount of sleep continued to be a problem in the ward setting because of the pain they were experiencing. One of these patients stated, "If it wasn't for the pain, I could sleep." A patient, who had obtained a better quality of sleep in the intensive care unit than she was presently experiencing, stated, 52 hours following her transfer from the intensive care unit, "Still can't get a good night's sleep. Since I came here, I haven't slept well yet." She had not been able to sleep well because of the "weird dreams" she was having and her constant need for pain medication in the ward setting. Seven days after their transfer from the intensive care unit to the ward setting, five patients who were in traction or wearing casts still were not sleeping

well. One patient summed up the problem: "I'm not sleeping well. I have a lot of pain and I have to go to the bathroom a lot." This patient also found that her energy level was low and that her need for sleep was great. She explained, "I just feel so tired all the time."

The patients talked minimally about the pain they had experienced while they had been in the intensive care unit. One patient stated, "Like I didn't have hardly any pain up there (the intensive care unit) at all." Instead of focusing on the pain they had had in the intensive care unit, the patients focused on the pain they were presently experiencing in the ward setting. Three patients echoed the same statement: "I have a lot of pain." Seven days after his transfer from the intensive care unit, one patient said, "Oh, I can take a lot of pain, but not like this." This statement was in sharp contrast to the comments that he had made about his pain 24 hours following his transfer from the intensive care unit, "...well, it's more like a constant ache than anything." The patients, who were in pain, complained about the lack of adequate control of their pain by the staff, and the waiting they had to endure before they received their "shots".

Many of the patients could recall little about the medical procedures that they had experienced during their time in the intensive care unit. One patient could not remember being extubated, although she did recall, in detail, her son's visit which took place an hour after the

extubation of her endotracheal tube. Another patient accurately pinpointed the exact day when he was extubated: "It was three days ago." He seemed to associate the extubation of his endotracheal tube with being able to talk and to breathe: "Then I could talk and I wasn't going to choke." Some of the patients remembered being suctioned in the intensive care unit and that they had been fearful of dying and choking during the suctioning of their endotracheal tubes.

The patients did not talk about the medical procedures that they were presently experiencing in the ward setting which mainly consisted of physiotherapy treatments. Initially, all of the patients received physiotherapy treatments within the ward setting. After a period of convalescence (three to five days), they were taken to the physiotherapy department for their treatments.

Another aspect of their physical self to which the patients referred was their motor functioning. The fourth interview, which took place seven days after the transfer of the patients from the intensive care unit to the ward setting, was characterized by the patients' references to their present lack of motor functioning and their future level of motor functioning. Up until this time, the patients had not referred to their motor functioning. One patient stated, "Look at my arms. I've lost at least 20 pounds. I'm used to lifting heavy equipment. Now I can't even stand." Another patient was bothered by a cast that she perceived as

being too tight and which restricted her movements; a third patient awaited the removal of her chest tubes: "Once these tubes come out, I'll be even more mobile." These patients also seemed to perceive the restablishing of their ability to walk as a priority. One patient asked the investigator, "Do you think I'll be able to walk by March?" Another patient said that she was waiting to be transferred to a rehabilitation hospital "so I can learn to walk again."

Emotional

Emotional refers to the patient's perceptions of his/her feelings or emotional state. With regard to their emotional self, the patients talked about the feelings of fear, relief, euphoria, anger, and powerlessness which they had experienced in the intensive care unit. The patients also talked about various feelings which they had experienced or were presently experiencing in the ward setting. These included those of fear, depression, anger, and powerlessness.

All of the patients said that they had been scared during their stay in the intensive care unit and were presently terrified that they might have to return there. One patient stated, "I won't go back there, I just won't." Another patient, who faced the distinct possibility of having to return to the intensive care unit, said, "I'll just die here, I won't go back there." One patient explained that it had been only in the intensive care unit that she

had been "really scared" and that she was no longer scared.

In talking about their fears related to the intensive care unit, the patients repeatedly referred to "that tube", that is, the endotracheal tube, and the suctioning procedure. One patient stated, "Yeah, I was terrified when they put that tube down my throat. I thought I was going to die. I was scared I was going to choke." Another patient recalled, "Yeah, I was scared when they moved that tube, I thought I was going to choke."

While one patient stated that he had been fearful upon his arrival in the intensive care unit, other patients said they had felt relieved and euphoric "at being in a safe place." One patient stated that she did not mind the constant surveillance of the nurses as it provided her with a feeling of security. One patient, who remained confused during the first three interviews, mumbled several times, "It was terrible, terrible ... I hated the place." When asked why she had hated the intensive care unit, she would only say she had seen "scary things".

During the second interview, which took place 24 hours after the patients' transfer from the intensive care unit, the patients talked about how fearful they had been during the initial hours following their transfer to the ward: "I was scared when I first came here yesterday." Another patient stated that she had been "a little apprehensive"; another, "a little leery." One patient simply stated, "I was scared." The patients explained that they had been afraid

because they had thought that the level of care they would receive in the ward setting might be inadequate for the meeting of their needs. In the intensive care unit, they had received one-to-one nursing care. The patients realized that, in the ward setting, they would be one of several patients that the ward nurse would care for.

Another 'transfer' situation that aroused the feeling of fear was the transfer of patients from one room to another within the ward setting. Fear was expressed by two patients who were transferred within the ward setting. One patient asked the investigator, "Do you think I'll be okay in another room? I'm kinda scared of moving." Another patient was scared to move from his private room in the ward to a five bed room: "You know, I'm scared to move from here - I don't want to. I'm not ready to interact with other patients." This patient also expressed fears about his future physical abilities: "I'm scared I won't be able to walk." Seven days following his transfer from the intensive care unit, this patient became quite depressed and required help from a psychiatrist and a social worker. At this time, this patient stated, "I've become very emotional these last few days... I'm just so damned depressed." He openly cried and explained, "I cry over anything. Sometimes in the middle of the night, I wake up and cry."

Anger was an emotional response that often seemed to result when some of the patients perceived that the nurses did not understand or meet their needs. One patient talked

about the anger and frustration he had experienced in relation to one of the intensive care unit nurses whom he perceived as "having problems" and not understanding his needs. Another patient, who had been in a highly confused state in the intensive care unit, expressed anger at the nurses in the intensive care unit for not having explained things to her. With regard to the ward nursing staff, the patients generally expressed anger at them for not meeting their needs, especially for not controlling their pain adequately through the use of medication.

There were other things about which the patients were angry besides what they perceived to be a lack of adequate care. Some of the patients were angry about their accidents and, during the four interviews, often talked about the circumstances of their accidents. One patient attributed his problems to his accident and angrily said, "It's that damn accident." The patients expressed feelings of anger and frustration with regard to their physical limitations, but not until the fourth interview. One patient exclaimed, "I've got to depend on somebody to help me in and out of bed, to do everything!"

Another feeling expressed by the patients was that of powerlessness. One patient described "the feeling of not being in control" that she had experienced while she had been in the intensive care unit. She stated, "You have no control...you're at their mercy." Another patient described the loss of control she was experiencing in the ward

setting: "I'm used to being the controlling agent and now ..."

Intellectual

Intellectual refers to the patient's process of thinking or thoughts reflected in his/her beliefs, dreams and/or hallucinations, and attempts at comprehension. With regard to the intellectual aspect of their self, in terms of their experiences in the intensive care unit, the patients talked about, or made references to the dreams and/or hallucinations that they had had in the intensive care unit. They talked minimally about the attempts they had made in the intensive care unit to comprehend their experiences. The foci of the patients' reports related to their ward experiences were their beliefs about themselves, and their present attempts to comprehend their experiences in the intensive care unit and in the ward setting. Also, during the course of the four interviews, the patients moved from a description of their thoughts about what they had experienced in the intensive care unit to those related to what they were presently experiencing in the ward setting.

Beliefs

Beliefs refers to those things accepted by the mind as being true. Three patients believed that what they had experienced in the intensive care unit was true and valid. One patient was convinced that he had watched television in the intensive care unit; another, that there had been wild

horses in the intensive care unit, and another that the woman in her 'hallucination' had been real: "Oh no, she was there."

During the third interview, the patients mainly talked about what they presently believed about themselves and their role in their recovery: "It's all up to me now. I've got the work to do. There's not much anyone can do but me." Another patient believed herself to be in "a holding pattern lying here waiting." In contrast to some patients who were uncertain about whether or not they would survive, other patients believed that they would "make it". One patient stated, "I'm a survivor. I enjoy life and women. Life is great. Nothing is going to stop me." Another patient echoed a similar statement, "I'm tough. I'm a survivor. I've had to make my way in this world. I'll still fight on." These two patients both acknowledged that "it's going to take time."

Hallucinations and Dreams

Hallucinations and dreams refers to those mental experiences that appear realistic or believable but have, despite their vividness, no objective reality. Five of the six patients said that they had had dreams and/or hallucinations while they had been in the intensive care unit. One patient stated that he had not had any dreams or hallucinations in the intensive care unit. None of the patients were aware of any dreams that they had had that were about their accidents. The patients' ability to recall, in detail, the hallucinations and/or dreams that they had

experienced in the intensive care unit remained sharp throughout the four interviews. Two of the patients reported having had dreams in the ward setting. The other patients stated that they could not recall having had any dreams in the ward setting.

One patient, who was several hundred miles from home, recalled having had a dream in the intensive care unit about his home: "One time I saw my mother and father there ... I thought I was in Fort K., too." Although this patient knew that this experience had been a dream, he seemed to be unaware of the fact that some of his other experiences were what appeared to be hallucinations. Although there were no television sets or radios in the intensive care unit, he reported, "Well, the TV was working well." He also stated, "I had the radio on, so the noise wouldn't bother me."

Another patient reported that she had experienced a change in her surroundings following a "weird dream" in the intensive care unit. She said, "I woke up and the room looked different. I blinked and looked around. It's not the same room. I shut my eyes, opened them again, and looked around. No it's not changed." This patient, who was finding it difficult to sleep in the ward setting, also described an "unusual dream" she had had in the ward setting. She said, "It was weird, like a frightening dream. I don't know who I was fighting with."

A patient, whom the nursing and medical staff of the intensive care unit suspected to be experiencing behavioral

disturbances, was described in the nursing notes as having "a wild look on her face". She was noted by the staff to be picking at things in the air and not to be oriented to time, place, and person. This patient seemed to be confused and disoriented during the first three interviews and reported that she had seen "frightening things" in the intensive care unit. In response to a question about what these "frightening things" were, she stated, in the first interview, "Horses, horses." She also mentioned "having the baby, being there". During the second interview, she stated, "There were three of them", and during the third interview, she said, "Riding horses." Seven days following her transfer from the intensive care unit, this patient explained that she had had a baby three years previously and that she could "remember very little about being upstairs(i.e., in the intensive care unit)."

One patient, who was moved from the old intensive care unit to the new intensive care unit, described what he thought had been an hallucination that he had had the day that the unit was relocated. "I remember the nurses having a big party. They were drinking booze and carrying on. I mean isn't that weird?" He concluded that this experience had to have been an hallucination because "nurses don't do those kind of things in a hospital." In reality, there had been a party that evening in the intensive care unit, as the nurses celebrated the long awaited move to their new surroundings.

Another patient reported that she had had two distinct hallucinations while she had been in the intensive care unit. The theme of one of the hallucinations was related to an event that this patient had experienced one or two days prior to her accident. This woman reported that, in her hallucination, she had heard a battered woman screaming and calling for her and that she had felt frustrated during this hallucination: "I could hear her screaming. I could hear somebody beating her up, and ... it was my own pain ... I could hear her calling me, and calling me, and calling me and I couldn't do anything about it." This patient surmised that the screaming may have been her pain. There was an awareness by this patient, while she was in the intensive care unit, of this being an hallucination. She said, "That was my biggest hallucination because I knew she wasn't calling me."

During the fourth interview, this same patient recalled another hallucination which she had had in the intensive care unit. This hallucination involved a conspiracy: "I remembered that there was a group of people across from me plotting to kill me as I had some vital information. I was trying desperately to remember what that piece of information was so they wouldn't kill me ... I was thinking why do they want me? I don't know anything." This patient said that she had felt distressed during both of her hallucinations because her family members did not respond to her needs and cry for help which she had expressed during

her hallucinations.

One patient, who reported that he had not had any dreams or hallucinations in the intensive care unit, reported that he had had a dream in the ward setting about his temporary colostomy. This dream occurred during a sleep period two hours after his transfer to the ward.

Attempts at Comprehension

Attempts at comprehension refers to acts that are carried out in order to arrive at an understanding of something, and the results of these acts. During their stay in the intensive care unit, the patients appeared to have made only a few active attempts to come to understand what was happening to them. However, the patients said that they had experienced a need to understand and to know what was happening to them, when they had been intubated in the intensive care unit, and expressed anger and frustration at the nursing staff in the intensive care unit for hindering their attempts at comprehension.

Some of the patients had acted in order to obtain the necessary circumstances for arriving at an understanding of what was happening to them. One had tried to stay awake so she could "figure out everything that was happening to (her)." Two patients, who had found that the noise in the intensive care unit interfered with their attempts at comprehension, had attempted to deal with the noise by shutting it out. One of these patients thought that he had been able to block out the noise by playing a radio in the

intensive care unit; however, the unit did not have any radios. The other patient had used a coping mechanism for dealing with the constant noise in the intensive care unit which she had used in the past: "I just blank things out...I just kind of tune them right out. I think I more or less did that...you just pretend that there's no noise."

A few patients appeared to have had difficulty in coming to understand what was happening to them in the intensive care unit. One patient recalled how he had been "bothered" by the noise in the intensive care unit. He said, "I did try to figure out what the noises were, but then after awhile, I just didn't bother." Another patient described her stay in the intensive care unit as "timeless" and that she had not been able to differentiate between night and day until she had been transferred to the ward. She stated, "It was all just one big day." She recalled that she had spent most of her stay in the intensive care unit trying "to stop the screaming of that woman" and "figuring out what the information they wanted from (her) was."

Three patients stated that, after they had been transfered to the ward, they had reflected on their experiences in the intensive care unit and about how they might have been influenced by their experiences. One patient thought that her experiences as a patient had resulted in a change in her professional outlook. She summarized this new way of thinking, "I think I've always felt that you don't work with people enough, you work mostly to and on people.

But it's almost impossible to work with someone once they're not very lucid. Decisions have to be made and that's the way it goes." Two other patients stated that they thought that their experiences would have no effect on them.

Some of the patients appeared to have difficulty, in the ward setting, in coming to understand what had happened to them in the intensive care unit. For the most part, these patients perceived their experiences in the intensive care unit as having been a "bad dream that never really happened."

One patient, once she had been transferred to the ward setting, tried to figure out why she had only had hallucinations when her family members had been present in the intensive care unit, and why she had had the hallucinations she did have. She concluded that she had only hallucinated when her family members had been present "probably because it was safe to." She gave as a possible reason for the content of her hallucinations: "I think probably just because it had been very recent."

B. Health Professionals

Health professionals refers to the patient's perceptions of his/her experiences as they relate to physicians, nurses, or other medical personnel. There were two types of health professionals: helpful and unhelpful. The patients mainly talked about the nurses who had cared or were caring for them; they seldom referred to the other

health professionals whom they had encountered. The patients made many very positive comments about the nursing staff in the intensive care unit whom they perceived as having met most of their needs. However, the nurses in the ward setting were often perceived by the patients as not understanding their needs and, therefore, as unhelpful.

Helpful

Helpful refers to those health professionals whose actions and/or behaviors were perceived by the patient as aiding in the meeting of his/her needs. The patients mainly talked about the nurses as being helpful; they referred minimally to the physicians whom they saw as being helpful.

The nurses in the intensive care unit were more often perceived by the patients as having been helpful than the nurses in the ward setting. The patients acknowledged the high quality of care they had received in the intensive care unit. One patient stated, "The nurses were really good." Another patient echoed a similar comment: "They were really good to me." One comment was evident of the high regard in which the patients held the nursing staff: "They're there to save your life and they're good at it. I have a lot of respect for those people." Although she was semi-conscious for most of her 12 days in the intensive care unit, one patient remembered "the nurses just being there."

The patients generally perceived that their needs would be met by the nursing staff in the intensive care unit as is

evident in the following statement: "You have all those people around you constantly. Anytime you need something, they're there." The patients were accepting of the nurses' constant presence. One patient stated, "It's a feeling of security because you know if any little thing was to go wrong, they're right there. Like they even did their charting in the same room. They did everything in that room. Like you were never left all by yourself." Another patient said, "You felt secure there because if something was to go wrong, they'd be there to correct it right away."

The nurses in the intensive care unit were, for the most part, also perceived by the patients as having been emotionally supportive. One patient stated, "They held my hand every time - there was always somebody putting their hand on your forehead and saying, 'you're going to be okay.'" This patient was also very appreciative of what she perceived to be an extra effort made by the nurses to ensure that she was able to telephone her son: "Then too, when I wanted to go to the phone, they let me ... They said no problem. I mean it took them a hell of a long time - me and all my tubes and all my contraptions into this wheelchair just so I could go and talk on the phone for ten minutes and then go back to bed. Like it was to me - it was really nice of them because all I wanted to do was to say 'hi' to my boy."

The nurses in the intensive care unit were, for the most part, also perceived by the patients as having been

helpful in providing information. One patient said that he had been helped when the nurses had provided him with the information he requested and needed to clarify the confusion he was experiencing as a result of a dream he had had in which he had seen himself as being at home: "I asked the nurse where my mother was and she said she was up in Fort K.." Some of the patients perceived the nurses in the intensive care unit as having been helpful in providing them with explanations: "... sometimes the nurses were really good in talking and explaining things to me." Another patient echoed these sentiments: "They don't scare you up there anyway. They let you know everything they're going to do before they do it and why they're doing it. They really try and make you feel at ease."

Upon their transfer from the intensive care unit to the ward setting, the patients feared that they would not continue to receive, in the ward setting, the high quality of care they had received from the nurses in the intensive care unit: "I thought when I need something, there's not going to be anybody to help me." Another patient stated, "I thought I was going to get plunked in this room and more or less left to fend for myself." However, during the second and third interviews, the patients acknowledged the helpfulness of the nurses and that they were receiving good care. One patient stated, "I found that I got very good care - they've taken good care of me." Another patient perceived that her needs were being met: "So far, every time I've

needed something, they've been there." Still another patient perceived that only some of the nurses in the ward setting were meeting his needs: "Last week I had Diane, she understands me."

Few remarks were made about the physicians or other health professionals. During the fourth interview, one patient stated, "The doctors did all they can." Another patient talked about the social worker and psychiatrist who had come to talk to him and who had been helpful.

Unhelpful

Unhelpful refers to those health professionals whose actions and/or behaviors were perceived by the patients as not aiding in the meeting of his/her needs. The patients mainly talked about the nurses in the intensive care unit and ward setting as being unhelpful with regard to not understanding their needs; they referred minimally to the physicians as being unhelpful.

Some patients perceived that some of the staff in the intensive care unit had not always been helpful and expressed anger about this matter. One patient, who complimented the nursing staff in the intensive care unit, in general, expressed anger and frustration with regard to two nurses in the intensive care unit who had been unhelpful: "Sometimes they wouldn't try to understand what I wanted or was trying to say when I was intubated. They would almost always pretend that they understood me. I felt they

were playing games with me." He expressed a need he had had to understand what was happening to him but that the nurses had not understood his need: "Some of the nurses seemed to figure that I couldn't understand the explanations." This patient also perceived the constant interruptions of the nursing staff as disruptive and unhelpful: "They were always bothering you for one thing or another."

Another patient, who had been noted by the intensive care unit staff as experiencing behavioral disturbances, stated, in her continuing confused state, that she had needed to know what was happening to her in the intensive care unit and was angry because the nurses had not helped her to understand what they were doing. She felt that the nurses could have been more helpful: "They could've talked to me when I was screaming and tell me ... they could have told me being pregnant was normal."

The patients perceived that some of the nurses in the ward setting were unhelpful because they were not meeting their need for pain relief as is evident in the following statement made by one of them. "But here, they don't seem to know that I need something for pain." Some of the patients also perceived that the ward nursing staff were unhelpful because they did not seem to understand that they were experiencing a lot of pain: "They just don't seem to understand that I am in pain." Another patient stated, "They don't believe how much pain a man can have." This perceived lack of understanding, on the part of the nurses, resulted

in the patients becoming angry at the nurses. As one patient said, "Sometimes you almost have to beg for a pain killer." This patient admitted, during the fourth interview, that he had "often felt like hitting one of the nurses."

Some of the patients perceived the nursing and medical staff as thwarting their efforts to return home and, thus, as not helpful. One of these patients aptly stated, "They said they would transfer me back home. So why don't they?"

Another patient talked about the unhelpful, impersonal treatment of her by the nurses in the ward setting and expressed her frustration about it: "I guess what I find frustrating is that the nurses have no idea of what I've gone through. They just see me as an accident case who almost died." Later, during the same interview, she stated, "The things that are important to them (the nurses) are not important to you."

During the four interviews, the patients rarely mentioned the physicians or other medical personnel. One patient thought that it would have been helpful if his physician had shown him an x-ray of his pelvis. He said that he would have then better understood about his inability to walk. He stated, "They never have time for me." Another patient said, "The doctors never say much."

C. Significant Others

Significant others refers to the patient's perceptions of his/her experiences as they relate to his/her immediate family and friends, or organizations. There were two types of significant others: helpful and unhelpful. The patients generally perceived their significant others to be helpful rather than unhelpful in both the intensive care unit and the ward setting.

Helpful

Helpful refers to those significant others whose actions and/or behaviors were perceived by the patient as aiding in the meeting of his/her needs. The patients mainly perceived their significant others as being helpful in the intensive care unit and in the ward setting.

During their time in the intensive care unit, the patients had been aware of the presence of their visitors and had found their presence to be helpful. One patient acknowledged that she had derived comfort from her visitors, especially her husband, father, son, and best friend: "They meant a lot to me." She stated that her husband had told her how she had calmed down during their visits. Another patient, whose husband had spent his nights sleeping in a chair beside her in the intensive care unit, stated, "You gotta have somebody - somebody's hand to squeeze. It doesn't seem so bad when you've got somebody else to share the pain." These two patients often referred positively to the

visits they had had in the intensive care unit from their family members and friends.

The patients perceived that their family members and friends often helpfully "filled in", in the ward setting, information gaps which they had. The patients were told by their family members and friends about how "bad off" they had been in the intensive care unit and were given details of their accidents which they could not recall. These visits from friends and family members were anxiously awaited by the patients: "The days are so long without someone coming to see you." One patient, who remained confused during the first three interviews, repeatedly refocused the topic of these interviews to that of her two boyfriends. She anxiously awaited their visits and excitedly anticipated the gifts they would bring her. Although her father had visited her, she talked only about her two friends.

Unhelpful

Unhelpful refers to those significant others whose actions and/or behaviors were perceived by the patient as not aiding in the meeting of his/her needs. The patients generally did not perceive their significant others as being unhelpful either in the intensive care unit or in the ward setting.

The patients did not perceive their significant others as being unhelpful in the intensive care unit. However, one patient said that, during one of her hallucinations, in the

intensive care unit, she was a[nger with her family members for not understanding her and, thus, not being helpful: "I was trying to tell my father a[bout the plot, but he didn't seem to understand me...my fam[ily was there and I couldn't understand why they didn't seem to hear her screaming...I remember being upset that my f[amily seemed unaware of this plot."

In the ward setting, two p[atients perceived that an organization, Workman's Compens[ation, was preventing them from receiving their money, and [of being unhelpful. One patient stated, "There's no reason for [this, I'm entitled to this money. I need it."

D. Summary

The findings with regard t[o the accident victims' perceptions of their experience[s in an intensive care unit and their perceptions of their [experiences during the first week following their transfer f[rom the intensive care unit were presented in three section[s: self, health professionals, and significant [others. The findings were further presented in terms of t[wo phases: the intensive care unit phase and the post intensi[ve care unit phase. Changes in perceptions over the four in[terview periods were described in the appropriate pl[aces within each section.

The perceptions of the acc[ident victims' experiences in the intensive care unit, relati[ve to self, pertained to the following: sleep and medical pr[ocedures; feelings of fear,

relief, anger, and powerlessness; and hallucinations and dreams. In their reports of their perceptions of their experiences during the first week following their transfer from the intensive care unit, the patients focused on their concerns about sleep, pain control, and their present and future motor functioning. They also referred to feelings of anger, fear, depression, and powerlessness; and their beliefs and attempts at comprehension.

The perceptions of the accident victims relative to health professionals primarily pertained to the nursing staff. The staff in the intensive care unit were mainly perceived as having met most of the patients' needs through pain control, providing explanations, and understanding their needs. The nursing staff in the ward setting were not perceived as having understood the patients' needs, especially their need for pain control.

The perceptions of the accident victims relative to significant others mainly pertained to family members. These persons were perceived as having been most helpful in providing information and support. One organization was mentioned as being important but unhelpful as it did not meet the patients' need for financial assistance.

One change that occurred, with regard to the accident victims' perceptions of their experiences, was that the victims independently moved from talking about their perceptions of their experiences in the intensive care unit to talking about their perceptions of their present.

experiences and future. During the third and fourth interviews, the patients consistently refocused the interviews from the investigator's focus on their perceptions of their intensive care unit experiences (because the initial purpose of the study was to describe the patients' perceptions of their intensive care unit experiences) to their immediate experiences. The only exception was that some patients continued to talk about the hallucinations they had experienced in the intensive care unit.

With regard to the patients' attempts to organize their perceptions of their experiences in a meaningful way, there appeared to be two active attempts. During the fourth interview, three patients were attempting to organize their perceptions of their experiences in a way that was meaningful to them.

VI. Discussion of the Findings

In this chapter, the findings of this study with regard to six accident victims' perceptions of their experiences in an intensive care unit and of their experiences in a ward setting during the first week following their transfer from an intensive care unit are discussed generally and then more specifically, relative to each aspect of self, health professionals, and significant others. The findings are also discussed relative to the conceptual framework of the study.

The study revealed many things, one of them being that the accident victims, regardless of where they had had their experiences (intensive care unit or ward setting), focused far more on their experiences related to their self, than to those related to health professionals and/or their significant others. This is not a surprising finding considering the severity of the injuries suffered by the victims; it may be that this observed egocentricity is necessary for biological survival when one's life is threatened, and that this focus on the self is the first step of a natural recovery process experienced by the recovering accident victim or by all persons recovering from threats to their being.

With regard to the findings related to the physical self, the finding that the patients' sleep in the intensive care unit was of poor quality is consistent with the findings reported in the literature pertaining to sleep deprivation in intensive care units (Kornfeld et al., 1969;

Layne & Yudofsky, 1971). This lack of sleep, experienced by the patients in the intensive care unit, may have precipitated the extreme fatigue that the patients experienced during the first four to six hours following their transfer to the ward setting. It may also be that the inability to obtain a concentrated uninterrupted sleep period in the intensive care unit interfered with the patients' ability to destructuralize the stimuli they had experienced in the intensive care unit, and resulted in the development of the hallucinations and dreams they experienced. Furthermore, it may also be that, once these patients felt 'safe' in the ward setting, they were able to sleep and thereby begin to destructuralize the stimuli they were presently experiencing or had experienced in the intensive care setting. The lack of reported unusual dreams in the ward setting would appear to support this conclusion.

The finding with regard to the patients' great concern about their endotracheal tubes and the suctioning procedures they had experienced in the intensive care unit is not a surprising finding given that four of the six patients had suffered life-threatening respiratory problems secondary to fat emboli, and five of the six patients had required ventilatory assistance while in the intensive care unit. What is a surprising finding is the lack of attention focused by these patients on the physiotherapy treatments they were continuing to receive in the ward setting. It may be that this occurred because these physical therapy

procedures effected positive responses from the patients in that these procedures are associated with recovery and the patients were more focused on procedures that threatened their survival and, thus, effected negative responses. It may also be that this occurred because the patients were more preoccupied with other, more immediate concerns, such as pain control.

The finding with regard to the amount of pain experienced by these patients is interesting. Patient references to pain experienced in the intensive care unit were minimal; however, 'pain' became the focus of many of the interview sessions, notably the third and fourth interviews. It appears that pain control was not a problem in the intensive care unit. This is not surprising since nurses in intensive care units are trained to anticipate the patients' need for analgesia and can easily observe, on the monitor, the hemodynamic effects of their patients' pain. It is possible that nurses in the ward setting doubt their patients' need for analgesia or that nurses have difficulty assessing their patients' level of pain. Nonetheless, this patient preoccupation with the need for adequate pain control seemed to dominate much of the patients' interactions with the nursing staff in the ward setting.

The finding with regard to the patients' change of focus from concerns related to their survival to concerns about their present and future motor functioning is not surprising. It was during the fourth interview, seven days

post transfer from the intensive care unit, that the patients began to focus on their motor functioning. It could be that, at this time, the patients were beginning to believe that they would indeed survive and could return to 'normal living' and, thus, began to worry about their mobility rather than their survival.

With regard to the findings related to the emotional self, the finding that the patients had been fearful in the intensive care unit is not an unexpected finding. The patients' expressions of fear about dying were not ungrounded as some of the patients did experience severe respiratory distress and, if they had not been placed on the ventilators, would have likely died. The finding that the subjects in this study experienced 'transfer anxiety', upon being transferred from the intensive care unit to the ward setting, is a finding that is supported by similar findings reported in the literature (Anderson, 1982; Benoliel & Van de Velde, 1975; Kimball, 1969). The 'transfer anxiety' experienced by the patients in this study could have been, in part, a result of the positive way in which the patients perceived the intensive care unit nurses whose constant presence provided a sense of security for them. Evidence for this possibility is that the patients feared that they would not continue to receive, in the ward setting, the high quality of nursing care that they had received in the intensive care unit. In his study, Kimball (1969) found that the 'transfer anxiety' experienced by the patients was

generally short-lived. Similarly, in this study, 48 hours post transfer from the intensive care unit, the patients' fears related to their transfer had nearly dissipated.

The finding with regard to the expression, by only a few patients, of their experiencing a feeling of powerlessness in the intensive care unit is not surprising. It may be, as Dlin et al. (1968) noted, that patients view health professionals as essential to their survival and are, therefore, accepting of the control wielded by the staff in bringing them back, once again, to a healthful state.

The intensity of the anger expressed by the patients in this study was surprising. Some patients expressed anger at the nursing staff for not understanding their need to understand what was happening to them. It is interesting to note that, even in her outwardly confused state, one patient later acknowledged that she had been angry at the nurses in the intensive care unit for not providing her with information. In the ward setting, the patients again expressed anger at not having their needs met - especially their need for pain medication. This anger was most intense and often dominated the third and fourth interviews. It is possible that the patients regressed to a child-like state of egocentricity in which they wanted all their needs met immediately, and became angry when this did not occur. It is also possible that this expression of intense anger is part of a stage or phase through which accident victims progress. It may also be that the patients' focusing on their need for

pain medication was a sign of other undefined needs not being met.

The finding that one of the patients was depressed has also been found in studies of recovering cardiac surgical patients. However, further research is required to determine if the one occurrence of depression, observed seven days post transfer from the intensive care unit, is a serendipitous finding, or is, indeed, something that is indicative of a stage or phase through which accident victims progress in their recovery.

With regard to the findings related to the intellectual self, a large amount of data was obtained with regard to the hallucinations and/or dreams experienced by the patients in the intensive care unit. Many of these patients had complained about not being able to obtain a good night's sleep in the intensive care unit. In the literature, a strong correlation is reported between the occurrence of hallucinations and sleep deprivation (Kornfeld et al., 1965; Layne & Yudofsky, 1971; McFadden & Giblin, 1971). Woods and Falk (1974) had found, in their study, that patients exposed to an intensive care environment for less than 24 hours, were at minimal risk for developing the effects of sleep deprivation. One patient in this study, who had spent 50 hours in the intensive care unit, experienced what she had perceived to be an unusual dream in which the room changed shape. However, four other patients whose average stay in the intensive care unit, was seven days, experienced bizarre

hallucinations and/or dreams. Therefore, it is highly probable that the lack of sleep experienced by these patients in the intensive care unit could have precipitated the occurrence of hallucinations.

In 1970, Rubinstein and Thomas hypothesized that patients in intensive care units experience difficulty in separating reality from fantasy or illusions, especially if the latter becomes life sustaining. The patients in this study appeared to have experienced difficulty in separating reality from fantasy. Although there were no television sets in the intensive care unit, one patient believed that he had been watching television. Another patient was convinced that he had had an hallucination about nurses having a wild party in the intensive care unit when in fact there had been a party in the intensive care unit. Another patient knew that she was having hallucinations, yet her hallucinations may have had some basis in the reality she was experiencing. For example, she related an hallucination about people plotting to obtain information from her. She could, in reality, have observed a group of physicians, nurses, and therapists making morning rounds discussing the various patients, including herself.

While the patients perceived that the nurses in the intensive care unit, for the most part, met their needs, the number of unusual dreams and/or hallucinations these patients experienced, may indicate that the nurses were not necessarily fulfilling some important needs of these

patients. Friedrich and Lively (1971) hypothesized that, when patients are unable to reach out to others for clarification of their situation, they may withdraw into their subjective world to create order out of the unknown. Therefore, it is conceivable that some of the hallucinations, that the patients in this study experienced, may have been the patients' attempts at organizing their perceptions in a way that was meaningful to them. For example, the hallucination of one patient, which involved his watching television in the intensive care unit where there were no television sets, could have been this patient's way of making sense of some events that he might have observed in the intensive care unit, which might have seemed, to him, too bizarre and foreign to be real. Another patient, who was described by the staff as displaying 'bizarre behavior', reported experiencing 'horses' in the intensive care unit. When questioned further, in the ward setting, this patient revealed that she had always liked horses. This patient seemed to withdraw into a subjective world that was familiar and, in this case, pleasant to her. Her other hallucination of 'having babies' reflected events in her past that evoked terror for her; a feeling which she had experienced in the intensive care unit.

An interesting finding, not evident in the reported literature, was the patients' statements about their beliefs regarding their ability to survive. Two patients talked about being 'survivors' and their belief that they were

'going to make it'. It is interesting to note that this survivor theme was expressed by the two most seriously injured patients in the study and took place during the third interview, 48 hours post transfer from the intensive care unit. It is possible that, at this stage of their recovery, these two patients were attempting to convince themselves that they had indeed 'made it'. One of these patients became markedly depressed four days after having made such positive statements. It may be that the prounouncement of such positive beliefs is a coping strategy to ward off depression or may be a prodromal sign of depression in the recovery phase of accident victims.

A surprising finding is that the patients made few overt attempts to understand what was happening to them. Some of the patients expressed a 'need to know' what was happening to them in the intensive care unit. Others appear to have been bothered by the noises in the intensive care unit or being in an area where time could not be measured. It may be that the variable which fosters meaningfulness for an individual is information and, for a variety of reasons, these patients were denied the opportunity to acquire this information. It is also possible that the hallucinations experienced by these patients, when they were in the intensive care unit, were not just biophysiological, in origin, or defenses against an intolerable situation, but were attempts made by the patients to comprehend a foreign environment.

With regard to the findings related to health professionals, the patients perceived that they had received a high level of care from the nurses in the intensive care unit. One possible explanation for this high regard is found in a study report by Schnaper (1975) on trauma victims. Schnaper observed that trauma patients exhibited a high degree of regression which seemed to intensify their magical expectations of their helpers. Another possible explanation for the patients' high regard of the nursing care experienced in the intensive care unit is that the patients were at a 'physical' survival stage and their physical needs were met effectively by the highly skilled nurses in the intensive care unit. The finding that the patients did not hold, for the most part, the nurses in the ward setting in such high regard could be explained by the fact that the patients were no longer 'just surviving' and, consequently, their needs were different and more complex, and more difficult to meet, with the result that they might not have been met adequately. The situation might also have been complicated by what appeared to be the patients' egocentricity with regard to their needs and their lack of comprehension with regard to why their needs could not be met immediately.

With regard to the findings related to significant others, family members were identified by the patients as being highly important. As identified in the literature review and the conceptual frame of reference of the study,

personal resources, specifically significant others, can foster the patients' understanding of their experiences. One patient had the almost constant support of her husband whom she believed had greatly helped her through this experience. Another patient, who had a very unstable relationship with her father and two boyfriends, displayed bizarre behaviors, as noted by the intensive care unit nursing staff. When her friends visited, this patient became more agitated. This was in sharp contrast to another patient who, bothered by two distinct hallucinations, did not display bizarre behaviors while in the intensive care unit. In fact, she acknowledged that she had only experienced these hallucinations when her family members were present as "it was safe to."

In terms of the relationship of the findings of the study to the conceptual frame of reference of the study, the findings seem to be congruent with the conceptual frame of reference, in which the patients' perceptions of their environment, and the resulting responses to that environment are conceptualized as being influenced by the interaction of the characteristics of the stimuli, the reactions or responses of others, and the patients' personal resources. For example, certain stimuli, such as the noises in the intensive care unit evoked certain responses. Some patients acknowledged that they had tried to understand what the noises were but had been unable to do so, or that they had shut them out. It is possible that some of the patients had hallucinations grounded in the noises of the intensive care

unit. The nurses' responses to the patients were instrumental in eliciting certain responses from the patients. For example, when the patients were not being understood or being misunderstood by the nurses, they often reacted in anger and frustration. It was not within the scope of this study to determine the nurses reactions to the patients' behavioral responses and the subsequent effects that their actions may then have had on the patients. The patients generally appeared to react positively to some of their personal resources: their family members, and friends. Those patients with strong family relationships appeared to have fewer problems in recovering from their hallucinations than the patient who had an unstable relationship. The patients also relied heavily upon personal resources such as past experiences, beliefs, and coping strategies. As the study sample is small, it is difficult to determine the importance of these personal resources in the patients' attempts to organize their perceptions of their experiences in a way that was meaningful to them.

VII. Summary, Conclusions, Limitations, and Implications of the Study for Nursing

A. Summary and Conclusions

The purpose of this study was to increase nurses' knowledge about the experiences of accident victims admitted to an intensive care unit so that nurses would have a better means by which they could think about what is required if appropriate nursing interventions are to be used in the care of these patients. In this study, the following were described: the perceptions of accident victims of their experiences in an intensive care unit; their perceptions of their experiences in a ward setting during the first week following their transfer from an intensive care unit; the changes, if any, that occur in their perceptions of these experiences; and their attempts, if any, to organize their perceptions of these experiences in a way that is meaningful to them.

The conceptual frame of reference of the study was based on a review of the literature of the impact of the environment on the perceptions and responses of individuals who are or were patients in an intensive care setting. This frame of reference suggests that the patients' perceptions of their environment, and the resulting responses to that environment are influenced by the interaction of the characteristics of the stimuli, the reactions or responses of others, and the patients' personal resources.

Six accident victims were interviewed during the first week following their transfer from the intensive care unit at various times (within 6 hours of transfer from the intensive care unit, after 24 hours and before 48 hours following the transfer, after 48 hours and before 56 hours following the transfer, and 7 days post transfer). The interviews were semi-structured and an interview guide was utilized.

The data collected through the interviews were subjected to content analysis. Categories and subcategories relating to the accident victims' perceptions of their experiences in the intensive care unit and in the ward setting were established. The patients' statements were segmented into analytic units according to the established unit of analysis and distributed over the established categories and subcategories. To assess the reliability of the investigator's coding of the data, a coder independently coded a random sample of five pages from the interview narratives. A 92% agreement on the coding of the units was obtained.

Three major categories were identified: self, health professionals, and significant others. When the patients talked about their experiences in the intensive care unit, they primarily referred to their self in terms of their lack of sleep, their fear of procedures and of dying, and their anger at not always being understood by the health professionals. A large amount of data was obtained

pertaining to their experiences of hallucinations or unusual dreams. In talking about their perceptions of their experiences during the first seven days post transfer from the intensive care unit, the patients made references to their high degree of pain, their present and future motor functioning, their anger at the nursing staff, and their beliefs about themselves. There were few attempts made by the patients, either in the intensive care unit or in the ward setting, to comprehend their experiences. The patients generally perceived the nursing staff in the intensive care unit as being helpful in meeting their needs. The patients generally perceived the nursing staff in the ward setting as not being helpful in meeting their needs, especially their need for pain control. The patients also perceived their significant others as being helpful through their support and love.

The following conclusions were based on the investigator's interpretation of the patients' narratives. With regard to the patients themselves, it is concluded, based on the patients' reports of their experiences, that all of the patients had experienced one or more behavioral disturbances to some degree, while in the intensive care unit, the most common being that of an hallucination. It appears that hallucinations may play a very important 'sustaining' role for some patients while they are in an intensive care unit. If so, it may well be that hallucinations promote the recovery of such patients.

Because of the fact that the patients in the study had hallucinations when they seemed to be deprived of sleep in the intensive care unit, and because of the literature on the effects of sleep deprivation on cardiac surgical patients in an intensive care unit, it is hypothesized that there is a strong correlation between the effects of sleep deprivation and the occurrence of hallucinations in accident victims who are in an intensive care unit environment.

The most common emotion expressed by the patients was that of anger and fear which seemed to be precipitated by events over which they had no control or knowledge. It is hypothesized that, because people have a 'need to know' and understand what is happening to them, feelings of anger surface when this need is not met adequately (as seemed to happen in this study). If this is true, then it seems that nurses have a very important role in helping to decrease patients' feelings of fear by providing information which patients require to come to know and understand what is happening to them. It is also not unlikely that the patients misdirected their angry feelngs, about their accidents, at the nurses in the ward setting, especially in the form of complaints about their pain, and that such an expression of anger is a stage through which all accident victims progress.

It appeared that the patients made few overt attempts, either in the ward setting or in the intensive care unit, to organize their perceptions of their experiences in a

meaningful way, possibly because they did not possess the necessary information with which to order all the diverse stimuli, or because of their noisy environment. Because of some of the patients' attempts to shut out the noises in the intensive care unit in order to comprehend what was happening to them, it is hypothesized that noises in the intensive care unit hinder patients in their attempts at comprehending a foreign environment. If this is true, then it seems that nurses have an important role in helping patients to organize their perceptions of their experiences in a way that is meaningful to them, by providing an environment that is conducive to reflection.

In relation to the question of the changes that occurred in the patients' perceptions over the time period of the study, the major shift observed, in the interview sessions, from discussion about past events (such as those that occurred in the intensive care unit) to discussion about present and future events (that is, what the patient was presently experiencing or might experience) seems to have occurred because the patients were not as concerned with 'just surviving', as they were with their rehabilitation. It is hypothesized that this focus on present and future events will continue to dominate the patients' frame of reference throughout the ensuing rehabilitation period.

B. Limitations of the Study

The generalizability of the findings of the study is limited in that the sample consisted of a small number of accident victims admitted to one hospital over a specified period of time. Also, the accident victims were selected non-randomly based upon the criteria for inclusion in this study. Consequently, the experiences of the subjects of this study may not necessarily be representative of the general population of accident victims admitted to an intensive care unit.

Another limitation of the study is that no objective measures were consistently used to validate the patients' perceptions of their experinces. In several instances, observations made by the investigator were helpful in validating some of the subjects' perceptions of their experiences. For example, the investigator's observations of the intensive care unit was useful in determining that one patient's perception of having watched television in the intensive care unit had no basis in reality and was, thus, indeed an hallucination. However, since the findings of the study were not consistently validated using suitable objective measures, they are limited in terms of their validity.

A further limitation is that data were collected according to an interview schedule in which the reliability of the interview times was not established. Therefore, valuable data could have been missed.

Another limitation of the study is that only the patients' retrospective perceptions of their experiences in the intensive care unit were studied. Problems related to the recalling of memories of past experiences may have been substantial and, consequently, the perceptions reported by the study subjects of their experiences may not have been an accurate reflection of the perceptions they had actually experienced in the intensive care unit. However, an assumption of the study was that patients would report their experiences as accurately as their recall allowed.

C. Implications of the Study for Nursing

On the basis of the study findings, conclusions, and limitations, a number of implications for nursing can be postulated. The findings of this study seem to show that nurses can have an impressionable effect on the acutely injured accident victim both in the intensive care unit and in the ward setting. The finding that a majority of the patients perceived the nurses in the intensive care unit as being supportive and understanding would seem to affirm the important role of these highly skilled nurses beyond that of giving a technical type of nursing care.

The finding of a high degree of anger and frustration among the patients and directed by them toward the nursing staff in the ward setting for not meeting their needs, specifically their need for pain control, may indicate that ward nurses need assistance in assessing the degree of pain

experienced by patients in their care. It may also indicate that nurses in both the intensive care unit and in the ward setting need to keep in mind, that the expression of anger may be a stage that all accident victims progress through, and that their preoccupation with pain is a 'vehicle' for the expression of anger that they are experiencing about their accidents. With regard to the 'transfer anxiety' experienced by the patients, it seems that it would be important for nurses in the ward setting to know about the experiences of their patients who have been in the intensive care unit so that they might better understand the meaning, to their patients, of their transfer to the ward setting.

Numerous research questions arise from the results and limitations of this study. Because a small, convenience sample was used, a larger, randomly selected sample of patients should be used to permit generalizability of the findings. It would also be important to conduct a longitudinal study, examining the patients' perceptions of their experiences in the ward setting over a longer period of time (e.g., one month). Such a study might reveal possible phases or stages through which recovering accident victims progress. It would also be important to compare the accident victims' perceptions with those of other groups of critically ill patients (e.g., cardiac surgical patients, acute medical patients, and chronic long-term medical patients), to determine if there are any common themes to these patients' perceptions. It would also be highly

desirable to interview such patients while they are in the intensive care unit, so that the actual perceptions of these patients of their experiences could be studied, and not their remembered perceptions as was the case in this study. However, the obtaining of an informed consent from patients with varying levels of awareness could pose a potential ethical problem.

The finding that the patients made very few attempts to organize their perceptions of their experiences in a meaningful way raises many questions for further study. Are accident victims in intensive care units utilizing hallucinations as a method of achieving organization of their thoughts and feelings? Are such patients hindered in their attempts to organize their perceptions of their experiences in a meaningful way by the cacophony of sights and sounds in an intensive care unit? Is the patients' priorization of their concerns, in effect, an organization of their perceptions in a way that is meaningful to them?

In spite of its many limitations, this study is important, in that it has identified, for further study, specific behavioral responses which accident victims may experience and which may have an adverse effect on their recovery. Since this study raises more questions than it answers and since nurses seem to be unaware of the experiences of accident victims admitted to an intensive care unit, it is important that further research be conducted in this area.

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Appendix A

Family Consent Form

Appendix A
Family Consent Form

Researcher:

Marilyn Archibald, R.N.
Master of Nursing Student
Faculty of Nursing
University of Alberta
Edmonton, Alberta

Title of the Study:

The Accident Victims' Perceptions of the Intensive Care Unit Experience

A study is being conducted in an attempt to find ways to improve the care of patients in an intensive care unit. Many times, nurses are not aware of some of the things that bother a patient while he/she is recovering from surgery or an accident. Nurses do not really know what it is like to be a patient in an intensive care unit. Therefore, I am interested in observing your spouse/relative while he/she is a patient in the unit to find out what it is like for him/her.

I will not be providing nursing care during the time I spend with your spouse/relative, but will be observing the environment around him/her and may talk to him/her (if his/her condition permits), and to you.

Once the physical condition of your spouse/relative has improved and he/she can understand the nature of the study, I will ask him/her to sign a formal consent to participate in the study. If he/she wishes not to be included, information obtained from your spouse/relative up to that point in time will be destroyed and therefore not included in the study. When your spouse/relative is discharged from the intensive care unit, I will, with his/her permission, interview him/her several times in the ward setting.

I would appreciate it if you would sign this form, indicating that you have read and understand the above information and that you have no objection to your spouse/relative being observed for the purpose of this study while he/she is a patient in the intensive care unit.

_____ _____

Signature of Investigator Signature of Family Member

_____ _____

Date Witness

Appendix B

Patient Consent Form

Appendix B
Patient Consent Form

Researcher:

Marilyn Archibald, R.N.
Master of Nursing Student
Faculty of Nursing
University of Alberta
Edmonton, Alberta

Title of the Study:

The Accident Victims' Perceptions of the Intensive Care Unit Experience

I consent to participate in the above named study about the effect of the intensive care unit experience on patients. I understand that the researcher will be observing me (or has observed me) in the intensive care unit and will interview me at various times in the unit and in the ward setting, and will gather (or has gathered) information pertaining to my intensive care unit experience from my chart, the medical and nursing staff, and/or my family.

I further understand that the researcher is not a member of the hospital staff and at no time will my individual comments be identified to hospital or non-research related personnel. All data will be kept confidential and my name will not appear in the study or in subsequent research reports or publications. The tapes used during any interviews will be transcribed (i.e., the content of the interviews will be typed) and the tapes will be erased following completion of the study.

If at any time after I become involved in the study, I wish to withdraw, I understand I am free to do so and my doing so will not jeopardize my care. Also, all data supplied by me or collected about me up to that time would then be destroyed.

_____	_____
Signature of Investigator	Signature of Patient
_____	_____
Date	Witness

Appendix C

Baseline Data Form

Appendix C

Baseline Data Form

I. Identification Datum
A. Patient Hospital No. _____

II. Demographic and Sociocultural Data
A. Age:_____

B. Sex: Male_____ Female_____

C. Ethnic group:_____

D. Religion: Protestant_____ Catholic_____
Jewish_____ Other(specify)_____

E. Marital Status: Single_____ Married_____
Separated_____ Divorced_____
Widow_____ Common-law_____
Lives alone_____
Lives with significant other_____

F. Employment status: Employed_____ Unemployed_____
Retired_____ Student_____
Housewife_____

G. Head of Household: Yes___ No___

H. Education: Highest grade completed_____

I. Previous hospital exposure: Yes_____ No_____
If yes, was the exposure as:
1. Patient: _____
2. Visitor: _____
3. Employee: _____

J. Previous knowledge about ICU: Yes_____ No_____
Sources of knowledge about ICU:_____

III. Data Collection Time Line

A. Time elapsed between accident and admission to ICU:_____hours

B. Nature of accident:_____

C. Time elapsed (in hours and/or days)between admission to ICU and first observation period in the ICU:_____

D. Observation periods while in ICU (date, time, length of observation period):

E. Interview periods while in ICU (date, time, length of interview):

F. Number of days/hours in ICU:_____

G. Time elapsed (in hours) between discharge from ICU and first interview in the ward setting _____ (within 6 hours).
Date, time, and length of interview: _____

H. Time elapsed (in hours) between discharge from ICU and second interview in the ward setting:_____ (after 24 hours and before 48 hours).
Date, time, length of interview:_____

I. Time elapsed (in hours) between discharge from ICU and final interview in the ward setting:_____(after 48 hours and before 56 hours).
Date, time, and length of interview:_____

J. Time elapsed (in hours) between discharge from ICU and final interview _____ (optimum time 7 days).
Date, time, and length of interview: _____

K. Total number of interviews since discharge from ICU:_____

L. Average length of interviews since discharge from ICU:_____

Appendix D

Interview Guide

Appendix D

Interview Guide

I would like to ask you some questions about your experience in the intensive care unit. I understand you were involved in an accident. Would you tell me about your accident?

What were your feelings when you awoke and found yourself in an intensive care unit?

What were your thoughts when you awoke and found yourself in an intensive care unit?

What did you think about when you were in the intensive care unit?

Did what was happening to you in the unit make sense to you? If so, in what way? If not, in what way did it not make sense to you?

Did you do anything in particular to make sense out of what was happening to you? If so, in what way? If not, why do you think you were not able to do so?
What helped you the most to make sense out of what was happening to you?
What did you not find helpful in making sense of what was happening to you?

What was the most important question you wanted to ask a (nurse, doctor, family member)?

What did you think when you first saw your family? How did you feel when you first saw your family?

What were your fears about? If you were fearful, were you able to communicate your fears? If so, how did you do so? If not, what did you do?

Were you aware of the machinery? If so, what were your thoughts and feelings about it?

Did anything change as time progressed while you were in the intensive care unit? If so, what and when did these changes occur?

Sometimes people have unusual thoughts, feelings, or dreams while they are in an intensive care unit. Did you experience anything unusual? If so, would you describe what you experienced? How did this experience affect you?

What bothered you the most about your stay in the intensive care unit?

What kinds of things do you think about as you lie here, today?